ANNUAL REPORT 2016-17

INNOVATION
DRIVES THE WORLD

INDIAN INSTITUTE OF TECHNOLOGY
HYDERABAD

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Only those who will risk
going too far can possibly
find out how far one can go

– T. S. Elliot

From the ***Director***

In July 2017 IIT Hyderabad entered its 10th year. We have come a long way in the last 9 years. Academically, we are at the forefront of developing new curricula and new programs. We are also at the forefront of research and development. Our faculty student ratio is best among all IITs – 1:13. We have a very strong PG program. The rough ratio among Ph.D. students, Masters students and undergraduate students is 30:25:45.

By Aug 2017, IITH will have more than 2300 students with almost 20% women students, and 180 faculty members. IITH's sanctioned research funding will be to the tune of Rs.350 crs. from nearly 300 plus sponsored projects. IITH's Scopus indexed publications will stand at 1700 with nearly 50 filed patents. IITH has strong industry collaboration – we collaborate with nearly 50 industries.

Our Japan collaboration is in full swing with Japanese faculty visiting us and IITH faculty visiting leading Japanese university on a regular basis. There is a strong student exchange program with Japan. Building the infrastructure with Japanese support will start this year.

IITH has MOUs with at least 50 universities globally, most of them in Japan, USA, Australia, Canada, Europe and Taiwan.

IITH has three technology incubators – iTIC, Center for Healthcare Entrepreneurship and Fabless Chip Design Incubator. Moreover, there are 6 research centers – most notable being Nano-technology, Teaching and Learning Center, and Design Innovations Center.

On the academic front IITH is innovating and scaling while maintaining quality: We have B.Tech. programs in 9 engineering departments, MSc in Physics, Chemistry and Mathematics, M.Phil. in Liberal Arts, M.Des. in Design, and Ph.D. in all 13 departments. There is strong emphasis on interdisciplinary academics. IITH has implemented a very novel academic program, referred to as, Fractal Academics – the key idea is to atomize courses, provide breadth and depth, emphasize courses in liberal arts as well as creative arts,emphasize project work, and create an interactive learning ambiance. In this approach the students will be well equipped to handle challenges of any job or challenges of post graduate education. IITH offers a Minor in Entrepreneurship to all students. IITH also offers a double major – hardworking and enthusiastic student can get two B.Tech degrees. Students at IITH can enrich their knowledge by opting for a minor and/or an honors program. This year IITH will start offering a minor in Design to promote design thinking among its graduates. IITH is the only institution to offer a course DigiFab (3D-printing) to all first year students.

IITH is the first institute to start an executive M.Tech. program in Data Science for working professionals. This year IITH will also start an all course option M.Tech. program.

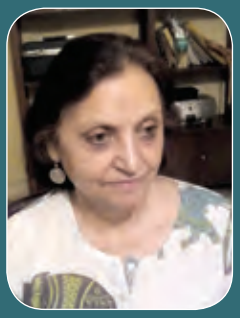
IITH is creating a unique holistic educational ecosystem that offers interactive learning, a highly, flexible academic structure, cutting edge research, strong industry collaboration, and entrepreneurship. It is providing an environment wherein students and faculty are not afraid to translate their dreams to realities.

Prof UB Desai

BOARD OF GOVERNORS

CHAIRMAN

Mr BVR Mohan Reddy
Executive Chairman
Cyient Limited



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Senior Professor & Dean
Indian Institute of Astrophysics

MEMBER

Dr Prema Ramachandran
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Indian Institute of Technology
Hyderabad

SENATE NOMINEE

Prof KVL Subramaniam
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Indian Institute of Technology
Hyderabad

EX-OFFICIO

Prof UB Desai
Director
Indian Institute of Technology
Hyderabad

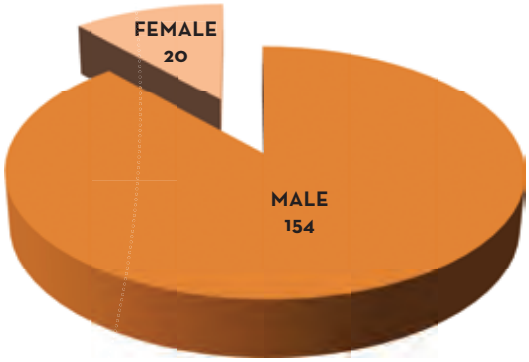
SECRETARY

Mr N Jayaram
Registrar
Indian Institute of Technology
Hyderabad

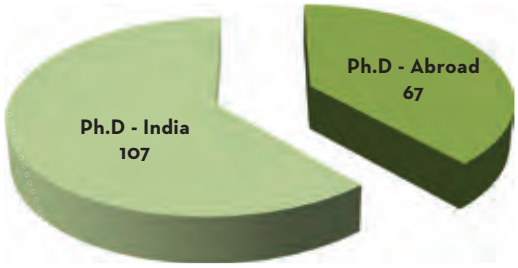
Faculty statistics

As on 31 March 2017, IITH is having 174 faculty members on its roll, making a student to faculty ratio of 11.5. Most of the hiring is done at the assistant professor level. 60% of IITH's faculty strength are assistant professors, 36% are associate professors and only 4% are full professors. 11.5% of the total faculty are women and the department of liberal arts leads the chart with 66% women faculty. 38% of the faculty members obtained their PhD from universities abroad and 53% possess post doctoral research experience from leading universities abroad.

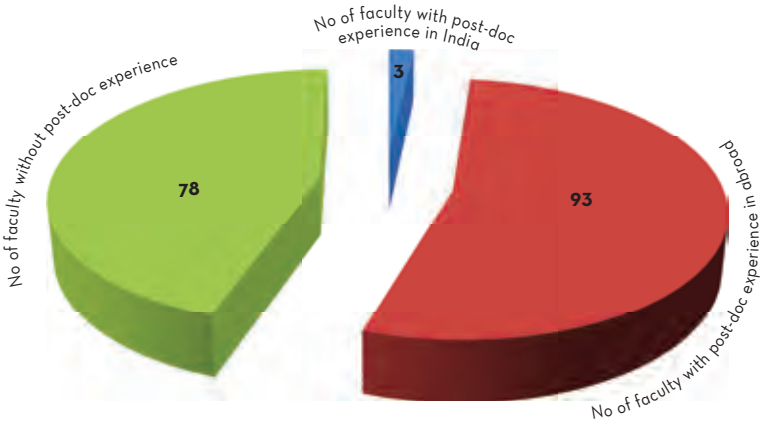
Gender-wise Distribution of Faculty



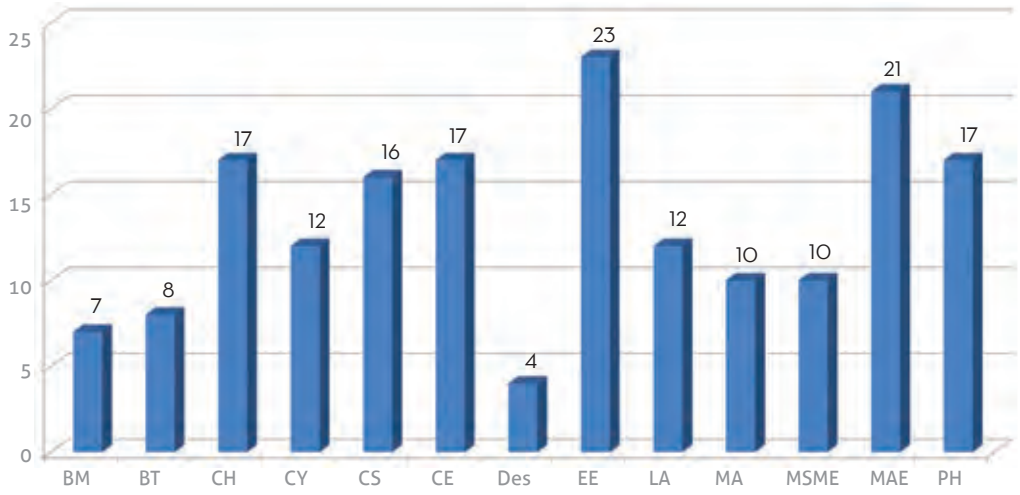
All Faculty with PhD



Faculty with Post-Doctoral Experience

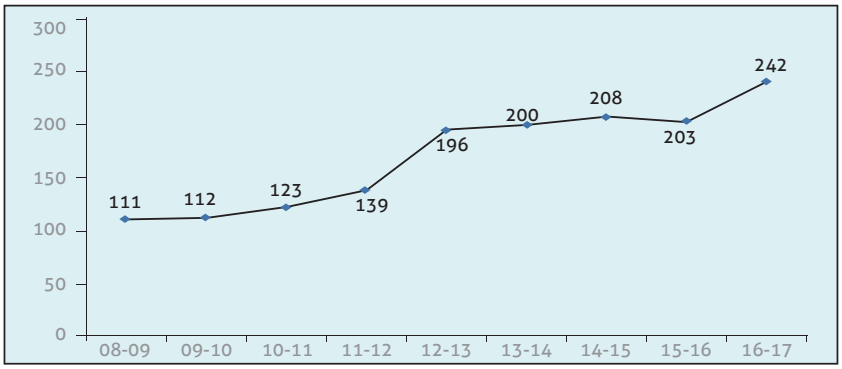


Department-Wise Faculty Strength



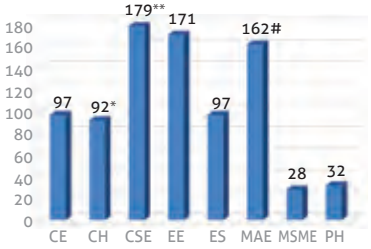
Academics

IIT Hyderabad currently has 10 engineering departments, 3 science departments, department of design and department of liberal arts. 8 B.Tech programs are being offered at IIT Hyderabad in Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Engineering Physics, Materials Science and Metallurgical Engineering, Mechanical and Aerospace Engineering, and Engineering Science. Out of these 8 branches, Engineering Science is a virtual department having associate faculty members from other engineering and science departments. 8 departments offer M.Tech program and the department of Civil Engineering, Electrical Engineering, and Mechanical and Aerospace Engineering offering multiple specializations. M.Sc programs are being offered by the departments of Physics, Chemistry and Mathematics. All the departments at IITH Hyderabad offers PhD program except the department of Engineering Science, which offers only B.Tech program.

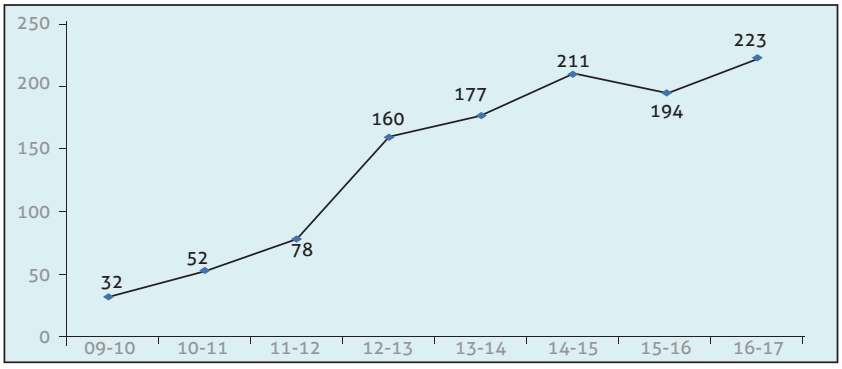


Total number of B.Tech students admitted in each academic year

B.Tech.
Department-wise Distribution of Total Students

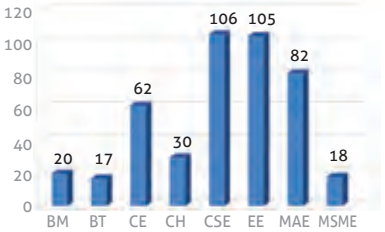


* = 2 students pursuing M.Tech. ** = 2 students pursuing M.Tech. # = 6 students pursuing M.Tech.
The above students are shown as M.Tech. students

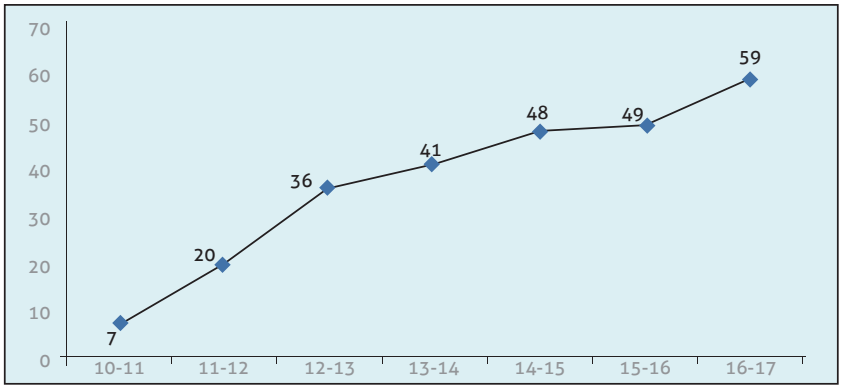


Total number of M.Tech* students admitted in each academic year

M.Tech.
Department-wise Distribution of Total Students

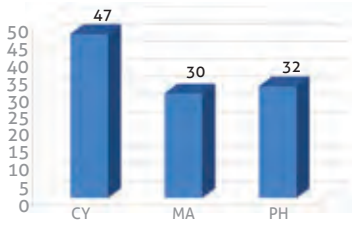


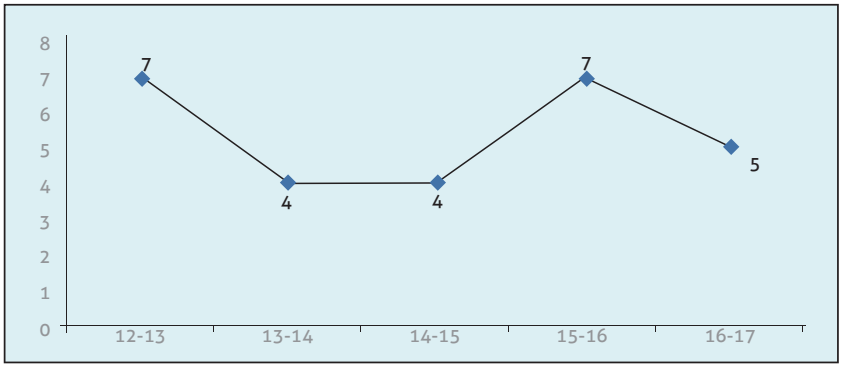
*M.Tech strengths including Dual Degree(Converted) student strengths



Total number of M.Sc students admitted in each academic year

M.Sc. Department-wise Distribution of Total Students

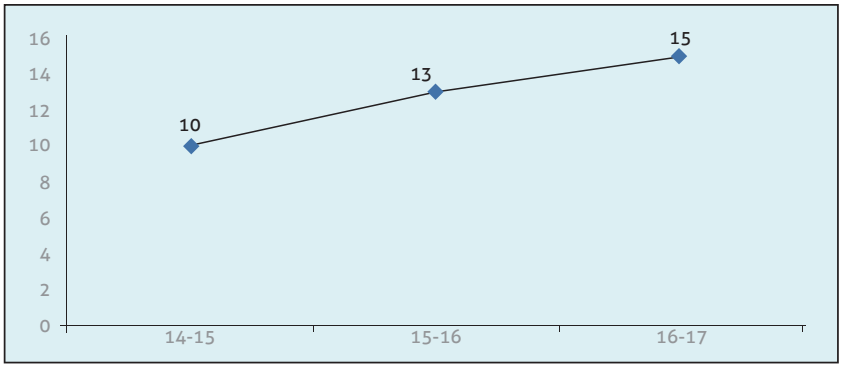




Total number of M.Phil students admitted in each academic year

Total Number of M.Phil Students

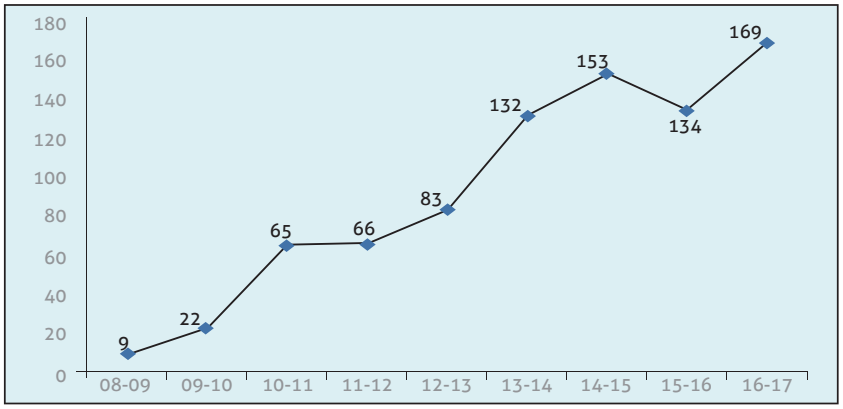
8



Total number of MDes students admitted in each academic year

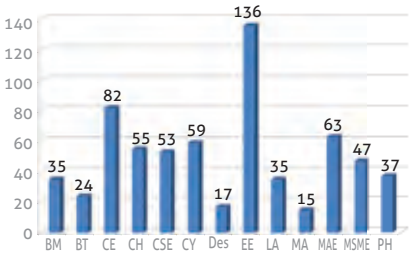
Total Number of MDes Students

30



Total number of Ph.D* students admitted in each academic year

Department-wise Distribution of Total Ph.d Students

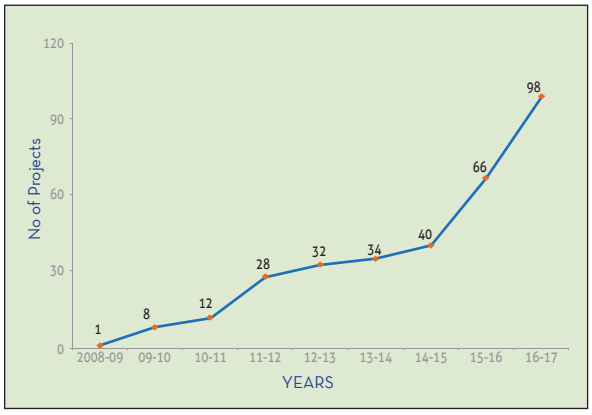


*Ph.D strengths including Dual Degree(Converted) student strengths

Research

The vibrant research culture in IITH is evident from the large number of publications and the sponsored projects. By the end of 2016-17 IITH had more than 100 sponsored projects funded by national funding agencies and private companies. The trends in sponsored projects in IITH over the last 8 years are shown in the charts below.

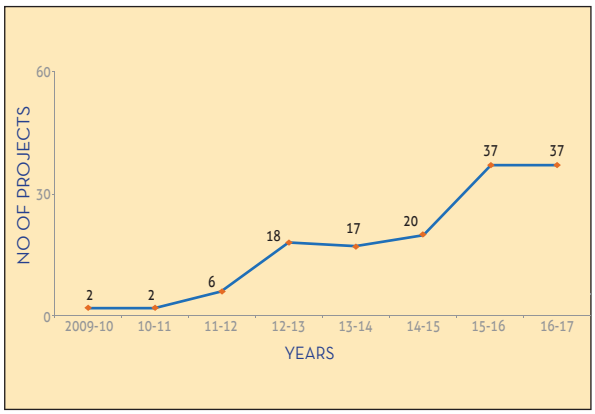
Research Projects



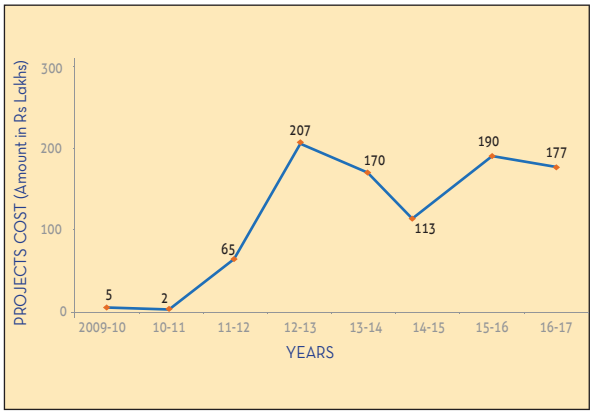
No of Sponsored Research Projects
Approved in Each Financial Year

Funding from
Sponsored Research Projects

Consultancy Projects



No of Consultancy Projects
Approved in Each Financial Year



Funding from Consultancy Projects

Placement

The placements at Indian Institute of Technology Hyderabad for the academic year 2016 -2017 have yielded 264 offers for 385 registered students. More than 200 companies have registered for the placement process out of them around 120 have made it to the campus and interacted with the students of B.Tech., M.Tech., M.Des., M.Sc. and Ph.D across 14 departments.

The top paying companies were Rakuten, Yahoo Japan and SMS Data tech. The highest salary offered for this year is Rs.38 LPA and the average salary is Rs.11.44 LPA. There were seventeen international offers.

A good number of students from UG, PG and M.Sc. have opted for higher education in India and abroad. Few Universities opted for higher education:

- Keio University
- Yokohama National University
- University of California
- University of Massachusetts, Amherst
- University of Illinois
- Columbia University
- University of Tokyo
- Purdue University
- National University Of Singapore
- University of Florida

Summer Internships

On an average more than 70% students have shown a keen interest in the internships which indicates their inclination to obtain a practical experience of the subject in the real time industry setting. We have some of the reputed companies and universities for the year's interns such as:

TEQIP (Phase II) activities

Technical Education Quality Improvement Programme (TEQIP) was envisaged in 2003 by Government of India and The World Bank as a long-term Programme of about 10-12 years duration to be implemented in 3 phases for transformation of the Technical Education System. IIT Hyderabad joined TEQIP (Phase II) programme in 2013 as a Knowledge Incubation Technical Education (KITE) center. The main purpose of IIT Hyderabad TEQIP KITE center is to train faculty from TEQIP supported institutes for effective teaching and to enhance postgraduate education with demand driven R&D development in TEQIP supported institutes.

The financial year 2016-17, also the last year of TEQIP (Phase II) programme, passed very hectic, seeing surge in all round activities. On 26 May 2016, Dr. Suhash Ranjan Dey is appointed as TEQIP Coordinator, IIT Hyderabad. He took over the mantle from Dr. Bharat Bhooshan Panigrahi. Total 24 Workshops of total 190 days are conducted with an expenditure of around INR 1.093 crores, attended by 583 participants of TEQIP supported institutes. The participants are mainly from Telangana, Andhra Pradesh, Karnataka, Maharashtra states. More number of workshops could be held mainly due to the arrival of fresh funds (INR 55.66 lakhs) from MHRD in December 2016. TEQIP (Phase II) programme got over in 31 March 2017 with total 54 number of Workshops & Conclaves being conducted, having attended by over 1336 TEQIP supported institutes' participants.

All the workshops conducted are different, spread across various disciplines and aspects of Technical Education. One such important workshop is 'Teacher Effectiveness Workshop for Women' which is conducted in association with Telangana Academy of Skill & Knowledge (TASK). Also, to support Indian government's Digital India initiative, for the ease of participants, freely downloadable Apple based ioS and Google based android workshop apps are developed, facilitating access to full workshop details through smart phones. Almost all workshops garnered encouraging feedbacks from the participants. Now, IIT Hyderabad is looking forward to active participation in TEQIP (Phase III).

Workshops conducted in 2016-17

S. No.	Workshop	Date	Faculty Coordinator(s)
1.	Energy Conversion and Storage (ECS) - 2016	9-14 May 2016	Dr. Surendra Kumar Martha
2.	Finite Element Method with Emphasis on Composite Structures (FEM) 2016	13-18 June 2016	Dr. Syed Nizamuddin Khaderi
3.	ISPAT (Structural Steel Design) - 2016	6-11 June 2016	Dr. M. Mahendrakumar
4.	Application of X-Ray Diffraction on Thin Films and Bulk Materials	4-9 July 2016	Dr. Ranjith Ramadurai
5.	Powder Metallurgy and Advanced Composites	11-16 July 2016	Dr. Bharat Bhooshan Panigrahi
6.	Equilibrium and Phase Transformations of Metallic Alloys	17-23 July 2016	Dr. Suhash Ranjan Dey
7.	Tissue Engineering: Biomaterials and Stem Cells for Manufacturing of Biological Tissue	18-23 July 2016	Dr. Subha Narayan Rath
8.	Deep Learning for Visual Computing (WDLVC) 2016	20-25 June 2016	Dr. C. Krishna Mohan
9.	Groundwater Flow and Transport Modeling through Fractured Geologic Media	27 June-8 July 2016	Dr. K.B.V.N. Phanindra
10.	Structural Upgrade and Strengthening of Civil Engineering Infrastructure using FRP Composites – 2016	18-29 July 2016	Dr. S. Suriya Prakash
11.	Structural Behavior and Design in Extreme Thermal Conditions including Fire Effects	11-22 July 2016	Dr. Anil Agarwal
12.	Going Beyond the Syllabus: Nurturing Students	6-7 August 2016	Dr. Mahati Chittem
13.	Compressive Sensing and Application (WCSA)-2016	25-27 October 2016	Dr. Challa Subrahmanya Sastry Dr. Soumya Jana Dr. Phanindra Varma Jampana
14.	MEMS & NEMS (Fundamental Design and Fabrications	21-26 October 2016	Dr. Prem Pal Dr. Chandra Shekhar Sharma Dr. Ashok Kumar Pandey
15.	Probabilistic Seismic Hazard Assessment (PSHA)	21-26 October 2016	Dr. Surendra Nadh Somala
16.	Nano Sensor: Design, Principles and Applications	3-7 December 2016	Dr. Amit Acharyya Dr. Sushmee Badhulika Dr. Ashudeb Dutta
17.	CFD: Theory, Modelling and Applications in Process Industries	23-25 February 2017	Dr. Narasimha Mangadoddy
18.	Teacher Effectiveness Workshop for Women	3-4 March 2017	Dr. M.P. Ganesh Dr. Mudrika Khandelwal
19.	Biomedical Imaging and Informatics	5-9 March 2017	Dr. Lopamudra Giri
20.	Biotechnology and Bioengineering: Beyond the Books in 21st century	8-10 March 2017	Dr. Anamika Bhargava Dr. Sandeep Kumar Singh
21.	Finite Element Method with Emphasis on Composite Structure (FEM)	13-18 March 2017	Dr. Gangadharan Raju
22.	ICE: Internal Combustion Engines	20-24 March 2017	Dr. Pankaj Kolhe
23.	Tissue Engineering: Biomaterials and Stem Cells for Manufacturing of Biological Tissues	20-25 March 2017	Dr. Subha Narayan Rath
24.	ISPAT (Structural Steel Design) - 2017	20-25 March 2017	Dr. M. Mahendrakumar

IITH-Japan Collaboration

An MoU for mutual collaboration on research, student and faculty exchange was signed between IIT Hyderabad and Shizuoka University on 6th March. Shizuoka University is the 11th consortium university under the FRIENDSHIP program.

IITH has a special and unique collaboration with Japan. The collaboration spans across, joint research, human exchange and infrastructure development. Until now (2012-2016) 50 scholarships have been awarded for IITH graduates for pursuing higher studies in Japan. Another 120 scholarships will be available for IITH graduates (2017-2020). So far 46 IITH graduates applied for Masters program and 162 students applied for PhD programs in Japanese universities. Out of this, 6 students have been awarded scholarship for Master's program and 44 students have been awarded scholarship for PhD programs. The number of students admitted into various Japanese universities is as follows:

- Tohoku University – 2
- University of Tokyo – 12
- Keio University – 6
- Waseda University – 6
- Nagoya University – 2
- Kyoto University – 6
- Ritsumeikan University – 2
- Osaka University – 11
- Kyushu University – 3

Until the end of FY 2016, 71 Japanese faculty members visited IITH and 99 IITH faculty members visited Japanese Universities for interaction and research collaboration. 40 lectures have been given by the Japanese faculty members who visited IITH and 10 workshops and 3 international conferences were jointly held. The research collaboration between IITH and Japanese Universities resulted in 40 co-authored publications in peer reviewed journals.

As far as project are concerned, 1 project is approved by SICORP and another 1 is approved by SATREPS. A special initiative was taken by JICA in FY16-17 to further strengthen the research collaboration by launching the collaboration kick start program and 2 projects have been selected for funding under this initiative.

Since 2013, JICA together with the Japanese Universities conduct academic fair at IITH to educate the students about the opportunities available in Japanese Universities. The Japanese Ambassador Hiramatsu was the chief guest for the academic fair organized in 2016. The last financial year also witnessed two more MoUs signed with Hokkaido University and Shizuoka University.

MoU signing with NTPC

On 23 January 2016, a MoU was signed between IIT Hyderabad and NTPC Ltd. on Monitoring of Environmental Mercury Levels at Five Power Plants/Stations. The objective of the MoU is to perform a proactive study to establish a baseline for mercury before the beginning of plant operation. The study will last for 1.5 years and a lot new data is expected to be generated.

EU Meeting

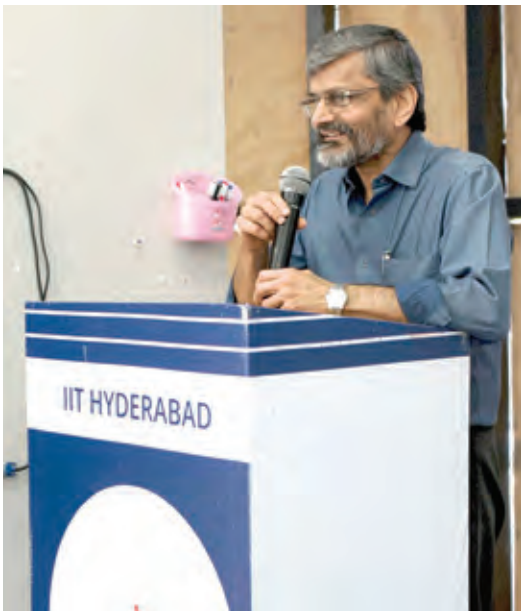
A high level European Union delegation comprising 11 members from the member states of Denmark, France Germany, Italy, Spain, Switzerland, UK and Austria visited IITH on 8 February 2017. The delegation was received by the IITH team and the meeting started with the brief introduction of members from both sides. This was followed by the presentation on IITH by director Prof. UB Desai and presentation the delegation. The presentations and the discussions were primarily focused on the possibility of participating in various EU funded projects and the scholarship opportunities for Indian scholars.

Student Alumni Meet

STUDENT ALUMNI MEET a.k.a. SAM, which is the annual flagship event of IIT Hyderabad Alumni Association, was conducted on 7th January, first Saturday of January as a trend with the same old motive of bringing students and alumni together. It was time again for nostalgia, as around 50 graduated students from different batches of IIT Hyderabad, gathered to relive old memories. The meet started with the interaction of Director Prof. U.B. Desai with alumni and students of IITH. Speaking on the occasion, the director underlined and praised the achievements of Alumni of IIT Hyderabad in all walks/spheres of life. He felt that it was matter of great pride for the institute that its Alumni are holding positions of responsibility in various Government organizations, PSUs, Private sector, Academic Institutions. Many of them are successful entrepreneurs providing jobs to others as well. He praised their contribution towards the growth of their Alma Mater and emphasized the need for further strengthening the linkage between the Alumni and IIT Hyderabad and current students.

The newly elected Alumni Association Governing Body introduced itself and summarized its vision of getting all the alumni registered on IITHAA website, having geographic city chapters that organize events all over the country (just like IITH USA chapter), providing internship and job opportunities to the current students, and organizing more interactive sessions.

Many alumni shared their experience about their work life, college life, etc. to the students of the institute. The day's program had a lot of exciting events lined up to raise the nostalgia one notch up. There was a photo exhibition by Photography Club of IIT Hyderabad which was followed by many sports events. The meet ended with promise to meet again and everyone bid emotional farewell to each other and their beloved alma matter.



Open Day @ IITH

To inspire the next generation and to seed the importance of technology education, under institute's National Service Scheme (NSS) body, IIT Hyderabad organizes Open Day. Open Day is an excellent opportunity for the rural school students to visit institute campus. IITH, as one of the premier technical institutes, invites school students and gives them the opportunity to meet and interact the students, staff and professors of IITH with the objective to motivate then for higher studies.

This year, NSS IIT Hyderabad organized Open Day on **6 February 2017**. The event was held at a large scale with over 350 students from 6 nearby schools in rural areas and non-profit organizations participated in the event with full enthusiasm. The day started with a formal inauguration ceremony presided by Dr. Prem Pal, Associate Dean Students, IIT Hyderabad. Techno-Awareness Workshop was arranged for school students and guests to have a first-hand glimpse of R&D and teaching activities in the fields of Engineering, Science and Design. Each academic department at IITH showcase their state-of-the-art facilities and gives live demonstrations about various sponsored/consultancy projects being executed by them to solve real-life problems. The visitors were also given a brief about the institute's history, student clubs & activities like NSS, NSO, cultural clubs and amenities like Dining Halls, Sports Grounds, and Library etc. to experience the vibrant student life at the campus. School students are also encouraged to actively participate in Quizzes / Competitions that happen on Open Day.

International Women's Day Celebrations

IIT Hyderabad celebrated the International Women's Day, on 8 March 2017 with a series of programmes to mark the occasion. It started with a talk at 2.30 pm by eminent economist Dr. Padmini Swaminathan, Professor, and Chairperson, School of Livelihoods and Development, Tata Institute of Social Sciences (TISS) Hyderabad, on 'The Formal Creation of Informality: How Government of India contributed to Making Women Workers Invisible and Informal'. In this talk, organized by the Department of Liberal Arts, Prof. Swaminathan spoke about the increasing trend of contractual labour in state-sponsored programmes, which particularly affects large numbers of women employed in health and education schemes. Large number of students, staff and faculty attended the talk, which was followed by an animated Q & A session. Dr. Shubha Ranganathan, faculty, Department of Liberal Arts, co-ordinated this talk.

The female staff at IITH enthralled the audience with their talent in singing, both from popular movies, as well as on women's empowerment. Their song on the girl child was particularly well appreciated.

Students followed with a debate on the pros and cons of the new surrogacy laws. Notions of individual agency and collective good, and the health problems surrogates encounter, were discussed from different perspectives. This session was moderated by Dr. Anindita Majumdar, faculty, Department of Liberal Arts. The audience also participated in the discussion.

The women's cell members, Dr. Lopamudra Giri and Dr. Haripriya Narasimhan thanked the audience for their participation. The event ended with a High Tea for all the attendees.

5th edition of i.School Workshop at IIT Hyderabad

The i.school workshop – focused on nurturing innovation and entrepreneurship – was conducted jointly by the University of Tokyo and IIT-Hyderabad on 11-14 March 2017 in the IIT-H campus. This is the fifth in the series of successful workshops that had been held at IIT-H. The theme of the workshop this year is: 'Human-centered Innovation on e-Health in India'. About 16 students and 7 faculty / staff members from the University of Tokyo joined us for this workshop.

i.school is a cross-disciplinary educational program established in the prestigious University of Tokyo. Headed by Prof. Hideyuki Horii, i.school seeks to develop and provide human-centered innovation educational programs in collaboration with educational, business and governmental entities such as Royal College of Art, Stanford Institute of Design (d.school), IDEO and Ziba. Through teamwork on carefully selected and inspiring themes, students enrolled in the programs acquire deep understanding of consumers and develop skills in ideation and prototyping that are practically realizable. For more details on i.school, please visit http://ischool.t.u-tokyo.ac.jp/.

What one can expect to get from this workshop?

- Understand and get exposure to structured approaches to innovation
- Work and ideate in an international collaborative team environment
- Innovate on relevant ideas for e-health in India, a growing need and business opportunity
- Get feedback from peers, Japanese students and organizers on your own innovative ideas
- Interact and build new friendships with top-class students from the University of Tokyo (see this link on why they are top-class)!

Swachh Bharat

Swachh Bharat activities were formally launched this year on 2 October 2016, the birth anniversary of the father of our nation Mahatma Gandhi who tirelessly advocated the importance of cleanliness. This was followed by cleaning of the hostel area in the ODF campus by a large number of student volunteers. In the following semester, another activity was carried out on 11 March 2017 at the dining area of the permanent campus and near the cafeteria opposite to E block. A large amount of garbage in the form of plastics and other non-biodegradable waste products were collected. The activity in addition to making the campus clean and green also generated camaraderie among the students and a sense of belongingness in the IITH community. The 2017 graduating batch of students actively participated to fulfill the requirements of the Clean India Course CI 101.

Shirucafe: Free coffee and beverages for IITH community

On 22nd April 2016, Shirucafe started its first overseas operation in IIT Hyderabad campus. It offers totally complementary café for students and staff of IIT Hyderabad. At IITH Shirucafe provides, Café Latte, Chai Latte, Green tea, Orange juice and Mango juice.

Independence Day Celebrations

70th independence day was celebrated on 15th Aug at IITH at grand scale. The function started with flag hoisting and director's address. This was followed by cultural programs by the student community.

Festival of Innovation - 2017

Department of Design, IIT Hyderabad ~ Design Innovation Centre @ FOIN 2017, The Indian Institute of Technology (IIT) Hyderabad participated in the 3rd Festival of Innovation (FOIN) 2017 at Rashtrapati Bhavan on March 8. The Design Innovation Centre (DIC) of IIT Hyderabad set up under the National Initiative for Design Innovation by the ministry of human resource development (MHRD) took part in the festival and showcased various projects by the design department of the institute. FOIN aims to recognise, foster and reward young innovators and create a vibrant ecosystem which will enable them to thrive. It stresses on the need to learn, share experiences in design and development which will help in delivering inclusive innovations for the common good. The institute presented their work across various areas like design for education, preservation of culture through animation, digital preservation of monuments.

The project on preservation of culture through animation aims to recreate history and culture of Telangana through virtual reality animation, take the viewers through a unique interactive experience of 360 degree animation and to preserve culture of Telangana through the medium of animation film. The project on digital preservation of monuments aims at documenting, preserving and conserving historical monuments.

Speaking about the projects, Prof Deepak John Mathew, associate professor, IIT Hyderabad, said, “The focus of DIC is to incorporate the cutting edge technology in design innovation. We are looking at a paradigm shift in design education by starting it at the school level so that we can foster the talents of design from the young age itself. And the digital preservation project will take the heritage preservation n to a new experiential level.”

GIAN COURSES @ IIT HYDERABAD




MHRD, Govt. of India has launched Global Initiative of Academic Networks (GIAN) program in November 2015. Since then, IIT Hyderabad has conducted 17 GIAN courses out of 18 courses approved by the Apex Body so far. Out of these 17 courses, 15 courses were conducted in FY 2016-17. These courses cover a wide range of state-of-the-art subjects including big data analysis, steel concrete composites, electron microscopy, radar system design and signal processing and hydrogeological modeling etc. In line with the objectives of the GIAN program, IIT Hyderabad hosted internationally renowned faculty from top institutes such as Perdue University, University of Texas A&M, University of Houston, University of Massachusetts Amherst, Michigan State University, University of Lorraine, University of Waterloo, Deakin University and National University of Singapore.

In all the courses, participation was very encouraging from across the country including premier institutes like IITs, IISERs and Central Universities. In some of the courses, there were as many as 150 participants. Apart from the regular teaching, most of the GIAN courses included tutorial, project based learning, and practical sessions. All the 17 courses were video recorded and 14 courses were live streamed through the open link on IIT Hyderabad and GIAN website. High quality course materials were also prepared for some courses, which was shared with the participants.

The following GIAN courses were conducted during the FY16-17

S. No.	Course Name	Course Coordinator from IITH	Foreign Expert Faculty	University / Institute of Foreign Expert Faculty, Country
1.	Modeling and Design of Steel Concrete Composite structural Systems	Dr. Anil Agarwal Department of Civil Engineering	Prof. Amit H. Verma	Purdue University, United States of America
2.	Enabling Large Scale Data Analytics: From Theoretical Foundations to Practice	Dr. Maunendra Sankar Desarkar Department of Computer Science and Engineering	Dr. Barna Saha	University of Massachusetts Amherst, United States of America
3.	Groundwater Flow and Transport Modeling Through Fractured Geologic Media	K.B.V.N. Phanindra Department of Civil Engineering	Dr. Walter Illman	University of Waterloo, Canada

4.	Applied Financial Modelling	Dr. Badri Narayan Rath Department of Liberal Arts	Prof. Paresh Kumar Narayan	Deakin University, Australia
5.	Behavior and Design of Structural Systems in Extreme Thermal Loading Conditions including Fire Affects	Dr. Anil Agarwal Department of Civil Engineering	Prof. Venkatesh Kodur	Michigan State University, United States of America
6.	Course on Finite Element Method	Dr. Amirtham Rajagopal Department of Civil Engineering	Prof. J N Reddy	Texas A&M University, Texas, USA
7.	Electron Microscopy: Basics and Applications	Dr. Suhash Ranjan Dey Department of Materials Science and Metallurgical Engineering	Prof. Emmanuel Bouzy	Professor at the University of Lorraine, France
8.	Structural upgrade and strengthening of civil engineering infrastructure using fiber reinforced polymer composites	Dr. S Suriya Prakash Department of Civil Engineering	Prof. Abdeldjelil Belarbi	University of Houston, USA
9.	Environmental and Human Health Risk Assessment of Chemicals	Dr. Asif Qureshi Department of Civil Engineering	Prof. Matthew MacLeod	Stockholm University, Sweden
10.	Spectrum Sharing in Next Generation Wireless Networks	Dr. Zafar Ali Khan Department of Electrical Engineering	Prof. Sumit Roy	University of Washington, Seattle, United States of America
11.	Dislocation Theory for Mechanical Behavior of Metals	Dr. Pinaki Prasad Bhattacharjee Department of Materials Science and Metallurgical Engineering	Prof. Nobuhiro Tsuji	Kyoto University, Japan
12.	Biomaterials Engineering and Digital Manufacturing	Dr. Chandra Shekhar Sharma Department of Chemical Engineering	Dr. PE Seeram Ramakrishna	National University of Singapore, Singapore
13.	Advanced Prestressed Concrete Design for Modern Buildings and Bridges	Dr. S Suriya Prakash Department of Civil Engineering	Dr. Sri Sritharan	Lowa state University, United States of America
14.	Social Network Analysis	Dr. MP Ganesh Department of Liberal Arts	Prof. Israr Qureshi	IE Business School, Spain
15	Social Network Theory	Dr. MP Ganesh Department of Liberal Arts	Prof. Israr Qureshi	IE Business School, Spain

To continue this, under GIAN phase-2, IIT Hyderabad has submitted 32 new course proposals on state-of-the-art-topics which will be conducted by December 2018, subjected to the approval of the apex body.

BIOMEDICAL ENGINEERING

The Biomedical Engineering Department (BME) at IIT Hyderabad is the place where boundaries between engineering and science disciplines fade in order to focus on research and education targeted for ongoing and future technology. The primary mission of the department is to foster interdisciplinary work of highest quality by bringing together a broad spectrum of faculty expertise under a single umbrella to focus on research in Biomedical engineering. By converging the engineering expertise in analytical and experimental methods to biological and medical sciences, BME aim at unveiling the unseen in biology and innovations in technology that can be translated to clinical health care.

BME has made substantial investments in strengthening the core research facilities and course curriculum. Numerous external research projects including IMPRINT were sanctioned during year 2016 – 2017.

The newly introduced BME minor program of 12 credits is designed for undergraduates to gain interdisciplinary knowledge in areas of Bioengineering. Faculty in the department of BME undertake research in broad spectrum of areas related to Biomedical Engineering/ Bioengineering such as Biophotonics, Lab on a Chip Biosensors, Biophysics, Biomechanics, Neuroscience, Tissue Engineering, 3D Bioprinting and Nanomedicine. The department will continue to leverage its core strengths in emerging as one of the leading centers of excellence in Bioengineering in the country.

Renu John
Ph.D – IIT Delhi

Associate Professor & HoD

Research Areas: Biomedical optical imaging, quantitative phase microscopy, biosensors

Mohan Raghavan
Ph.D – IISc., Bangalore

Assistant Professor

Research Areas: Computational Neuroscience, Motor system, Spinal cord, Bionics, Assistive devices, Rehabilitation

Harikrishnan Narayanan Unni
Ph.D – NTU, Singapore

Assistant Professor

Research Areas: Lab on Chip Microfluidics and Nanofluidics, Biophysics, Biomechanics

Falguni Pati
Ph.D – IIT Kharagpur

Assistant Professor

Research Areas: Biomaterials, Tissue Engineering, 3D Bioprinting, In Vitro Tissue/ Organ Models

Subha Narayan Rath
Ph.D – NUS, Singapore

Assistant Professor

Research Areas: Biomimicking; 3D Bio-Printing; Angiogenesis; Osteogenesis; Nature-Inspired Biomaterials; Decellularized Tissues; Organ-on-Chip; Cell Therapy

Aravind Kumar Rengan
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Nanomedicine; Bio-Nanotechnology; Photothermal Therapy; Nanotoxicology; Cancer Theranostics

Jyotsnendu Giri
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Nanomedicine; Regenerative Medicine; Drug Delivery, Therapeutics and Diagnostics

Patents Filed

Aravind Kumar Rengan - as inventor in collaboration with IITB and ACTREC (PCT Application no. PCT/IN2016/000296) Enzymatically degradable Lipos Au Nanoparticles for Cancer Theranostics, Claiming priority from IPA no.4910/MUM/2015. Filed on 27 December 2016).

Publications
(in peer reviewed journals)

N. Singh, M.A. Ali, K. Suresh, V.V. Agrawal, P. Rai, A. Sharma, B.D. Malhotra, and Renu John, **In-situ electrosynthesized nanostructured Mn_3O_4 – polyaniline nanofibers-biointerface for endocrine disrupting chemical detection**, Sensors and Actuators B: Chemical 236, 781-93 (2016).

V.P. Pandiyan, K. Khare, and Renu John, **Quantitative phase imaging of live cells with near on-axis digital holographic microscopy using constrained optimization approach**, Journal of Biomedical Optics 21 (10), 106003-106003 (2016).

S. Sankar, C.S. Sharma, S.N. Rath, and S. Ramakrishna, Electrospun Nanofibers to Mimic Natural Hierarchical Structure of Tissues: Application in Musculoskeletal Regeneration, Journal of Tissue Engineering and Regenerative Medicine, 1-43, ISSN: 1932-6254 (2016).

Girdhari Rijal, Byoung Soo Kim, Falguni Pati, Dong-Heon Ha, Sung Won Kim, and Dong-Woo Cho, Robust tissue growth and angiogenesis in large-size scaffold by reducing H_2O_2 - mediated oxidative stress, Biofabrication, 9(1), 015013 (2016).

Funded Research Projects 2016-17

Falguni Pati, 3D Bioprinting and Multimodal Characterization of An In-Vitro Biomimetic Livermodel, DST-SERB, 1 June 2016, Rs. 36.02 Lakhs.

Aravind Kumar Rengan, Biodegradable Nanoparticles for Imaging and Photothermal Treatment of Breast Cancer, DBT-IYBA, October 2016, Rs. 46.00 Lakhs.

Falguni Pati, 3D Printed Lower Limb Orthotics, MoHFW & Dipon Ed Biointelligence LLP, 30 November 2016, Rs. 153.97 Lakhs.

Falguni Pati, Ramlingaswami Fellowship – Three Dimensional Bioprinting of Biomimetic Multi-Liver Tissue Constructs, DBT, 9 February 2017, Rs. 32.5 Lakhs.

Aravind Kumar Rengan, Reduced graphene oxide/bimetallic nanoparticles for photothermal treatment of cancer DBT- NER Twinning Grant, February 2017, 33.00 Lakhs.

Talks Given in National / International Conferences

Renu John, Quantitative Phase Microscopy, Clinical Applications, National Seminar on Next Generation Device Design, Sastra University, Chennai, India (Plenary Talk), January 2017.

Renu John, Biomedical Optical Imaging, Applications and Future, Meditech 2K17, University College of Engineering Osmania University, Techinal Sympossium, Hyderabad, (Plenary Talk), 10-11 March 2017.

Other Events

TEQIP Workshop on Tissue Engineering: Biomaterials and stem cells for manufacturing of biological tissues, 18-23 July 2016.

TEQIP Workshop on Tissue Engineering: Biomaterials and stem cells for manufacturing of biological tissues, 20-25 March 2017.

Awards / Recognitions

Falguni Pati, DBT Ramalingaswami Fellowship (2016-21).

Tejaswini, Syed Baseeruddin Alvi, Aravind Kumar Rengan, Gandhian Young Technological Innovation Award (GYTI 2017) for Development of affordable cervical cancer detection kit presented in Rashtrapathi Bhavan, New Delhi on 5 March 2017.

BIOTECHNOLOGY

The faculty members in the department published 13 research and review articles in leading international journals like Nucleic acid research, Nature scientific reports etc. 3 PhD Biotechnology and 8 MTech in Medical Biotechnology degrees were awarded in the department. The faculty members in the department received more than 1.8 crore in research funding from various national funding agencies. Dr. Sandeep K Singh received the prestigious Ramanujam fellowship from Dept. of Science and Technology.

Basant Kumar Patel
Ph.D – Banaras Hindu University
Associate Professor & HoD
Research Areas: Protein Misfolding Diseases

Rajakumara Eerappa
Ph.D – CCMB, Hyderabad
Assistant Professor
Research Areas: X-ray Crystallography and Structural Biology; Epigenetic and DNA Repair Process in Mammals and Plants

Anindya Roy
Ph.D – IISc, Bangalore
Associate Professor
Research Areas: Cancer Biology; DNA Repair

Anamika Bhargava
Ph.D – Innsbruck Medical University, Austria
Assistant Professor
Research Areas: Voltage-Gated Calcium Channels; Electrophysiology; Channelopathies; Structure-Function Relationship; and Imaging of Ion Channels, Zebrafish

N K Raghavendra
Ph.D – IISc, Bangalore
Assistant Professor
Research Areas: HIV-1; Integration; LEDGF/p75, UBC13, MMS2, UEV1A; Inhibitors

Sandeep K Singh
Ph.D – Virginia Commonwealth University, USA
Assistant Professor
Research Areas: Biology of Neuron-Glia Interaction; Synaptogenesis and Plasticity

Thenmalarchelv Rathinavelan
Ph.D – University of Madras
Assistant Professor
Research Areas: Molecular Biophysics – Biomacromolecular Structure and Dynamics – Structural Bioinformatics

Ashish Misra
Ph.D – IISc, Bangalore
Assistant Professor
Research Areas: RNA Biology; Genomics and Transcriptomics; Alternative splicing

Book & Book Chapters

Yogesh Bhargava and Anamika Bhargava, ZebraTrack: An Automated Method to Study Zebrafish Behaviour, LAP LAMBERT Academic Publishing

Publications
(in peer reviewed journals)

A. Prasad, G. Raju, V. Sivalingam, A. Girdhar, M. Verma, A. Vats, V. Taneja, Ganesan Prabusankar, and Basant K. Patel, An acridine derivative, [4,5-bis{(N-carboxy methyl imidazolium) methyl}acridine] dibromide, shows anti-TDP-43 aggregation effect in ALS disease models, Scientific Reports,6, 39490 (2016).

V. Sivalingam, N.L. Prasanna, N. Sharma, A. Prasad, and Basant K. Patel, Wild-type hen egg white lysozyme aggregation in vitro can form self-seeding amyloid conformational variants, Biophys Chem., 219, 28-37 (2016).

V. Bharathi, A. Girdhar, A. Prasad, M. Verma, V. Taneja, and Basant K. Patel, Use of ade1 and ade2 mutations for development of a versatile red/white colour assay of amyloid-induced oxidative stress in Saccharomyces cerevisiae, Yeast., 33(12), 607-620 (2016).

V. Sivalingam and Basant K. Patel, Familial mutations in fibrinogen A-alpha (FGA) chain identified in renal amyloidosis increase in vitro amyloidogenicity of FGA fragment, Biochimie, 127, 44-49 (2016).

N. Sharma, V. Sivalingam, and Basant K. Patel, Recombinant Human Semenogelin-1 (Sg1) and Sg1 (1-159) form Detergent Stable Amyloid like Aggregates in vitro, Protein & Peptide letters, 23(1), 87-96 (2016).

G. Raju, V. Sivalingam, Archana, Basant K. Patel and Ganesan Prabusankar, Imidazolium Tagged Acridine Derivatives: Syntheses, Structures, DNA Sensing and Anti-microbial Activities, Journal of Molecular Structure, 1107, 291-299 (2016).

G. Shivange, M. Monisha, R. Nigam, N. Kodipelli, R. Anindya, RecA stimulates AlkB-mediated direct repair of DNA adducts, Nucleic Acid Research, 44, 8754-63 (2016).

G. Goldsmith, T. Rathinavelan, and N. Yathindra, Selective Preference of Parallel DNA Triplexes is Due to the Disruption of Hoogsteen Hydrogen Bonds Caused by the Severe Nonisostericity Between the G*GC and T*AT triplets, PLoS One, 11(3), e0152102 (2016).

S. Sachdeva, N. Kolimi, S.A. Nair, and T. Rathinavelan, Key Diffusion Mechanisms Involved in Water Conduction of Wzi, Sci. Rep., 28157, (2016) 10.1038/srep28157.

A. Bhargava, T. O'Hara, A.V. Glukhov, S. Schobesberger, N. Bhogal, M.B. Sikkel, C. Mansfield, Y.E. Korchev, A.R. Lyon, P.P. Punjabi, V.O. Nikolaev, N.A. Trayanova, and Gorelik, Microdomain-Specific Modulation of L-Type Calcium Channels Leads to Triggered Ventricular Arrhythmia in Heart Failure, JL Sanchez-Alonso, J.*Circ Res*. Sep 30;119(8), 944-55 (2016).

S. Nema, W. Hasan, A. Bhargava, and Y. Bhargava, A novel method for automated tracking and quantification of adult zebrafish behaviour during anxiety, *J Neurosci Methods,* Sep 15; 271, 65-75 (2016).

R. Anindya, Non-hemedioxygenases in tumor hypoxia: they're all bound with the same fate, DNA Repair, 49, 21-25 (2017).

S. Sachdeva, R. V. Palur, K. U. Sudhakar, and T. Rathinavelan, E. coli group 1 capsular polysaccharide exportation nanomachinary as a plausible antivirulent target in the perspective of emerging antimicrobial resistance, Frontiers in Microbiology, 8-70 (2017) 10.3389/fmicb.2017.00070.

Funded Research Projects 2016-17

Rajakumara Eerappa, Role of HMG Box Protein in Mitochondrial DNA Organization in Trypanosomabrucei: Structure and Molecular Insights into DNA Binding and Topological Modulation of DNA Structure by HMG Box Protein TbKAP6, SERB, 13 June 2016, Rs. 48.90 Lakhs.

N K Raghavendra, Characterization of Ubiquitin Conjugating E2 Enzyme UBC13 Interaction with Human Immunodeficiency Virus-1, SERB, 14 July 2016, Rs. 21.22 Lakhs.

Rajakumara Eerappa, Mechanistic Studies on High Mobility Group-Nucleosome (HMGN1) Binding Protein Complexes Involved in DNA Repair, DBT, 27 January 2017, Rs. 62.60 Lakhs.

Sandeep K Singh, Mechanisms of Neuron-Glia Interaction by Astrocyte Secreted-YKL-40 (Ramanujam Fellow), March 2017, Rs. 35.00 Lakhs.

Talks Given in National / International Conferences

Anindya Roy, RecA Protein Stimulates Direct Repair of Methyl-adducts in ssDNA, Gordon Research Conference on Genome Stability', The Hong Kong University of Science and Technology, Hong Kong China, 24-29 July 2016.

Thenmalarchelvi Rathinavelan, Mechanism of B-to-Z transition induced by A...A mismatch in a DNA duplex comprising of CAG trinucleotide repeat expansions, International Conference on Nucleic Acids: Biology, Human health and Diseases, Recent advances in applications of Nucleic acid, New Orleans, USA, 4-5 August 2016.

Thenmalarchelvi Rathinavelan, 'Give and Take: 'Z-philic' A...A Mismatch in a GAC Repeat Promotes Interaction with Zα Binding Domain of Human ADAR1 Protein', International Conference on Nucleic Acids: Biology, Human health and Diseases, Recent advances in applications of Nucleic acid, New Orleans, USA, 4-5 August 2016.

Thenmalarchelvi Rathinavelan, Key Diffusion Mechanisms Involved in Regulating Bidirectional Water Permeation Across E. coli Outer Membrane Lectin, Molecular Insights in Genetics and Biotechnology-Emerging Trends and Future Prospects, on the occasion of Golden Jubilee Celebrations of Department of Genetics, Osmania University, Telangana, India, 27-28 February 2017.

Invited Presentations

Structural Dynamics of Porphobilinogen Deaminase during the Tetrapyrrole Biosynthesis, Gopalakrishanan Bulusu, TCS, Hyderabad, 13 April 2016.

Polo like kinase 1: a master regulator of centriole separation and reduplication, Dr. Anil K Shukla, NIH, USA, 29 July 2016.

Functional Role of Mammalian Oligosaccharyltransferase, Shiteshu Shrimal, UMass Medical School, Worcester, 27 September 2016.

Investigating Structure-Function Dynamics of Protein Homeostasis Regulators: Applications to Health and Disease, Dr. Parul Mishra, Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, USA, 30 September 2016.

Workshops / Symposiums Organised

One-day Workshop on Structure Based Methods in Drug Design,Speaker: Dr. Ravikumar Muttineni, Sr. Application Scientist, Schrodinger, 30 January 2017.

Other Events

TEQIP workshop on Biotechnology and Bioengineering: Beyond the books in 21st century, 8-10 March 2017.

Awards / Recognitions

Thenmalarchelvi Rathinavelan, Shivangi Sachdeva, Narendar Kolimi, BIRAC SRISTI GYTI 2017.

Anamika Bhargava, Outstanding Women in Science-2017 award by Venus international foundation.

Anamika Bhargava, Honorary Research Associate, 2016-2019, National Heart and Lung Institute, Imperial College London, UK.

CHEMICAL ENGINEERING

The Department of Chemical Engineering, IITH houses 17 faculty members and 177 students of which 55 are PhD students indicating our focus on research. The department's research focus falls into the following broad areas: Energy storage and conversion, Fluid Mechanics, Mineral Processing, Catalysis, Molecular & Cellular Bioengineering, Drug Delivery, Polymers, Nanosciences & Nanotechnology and Process / Stochastic Control. The faculty actively seek research funding in all areas of research. We have state-of-the-art infrastructure and research facilities that cover both theoretical and experimental aspects of all core research areas. The B.Tech program encompasses a wide variety of courses which prepares a student for both industry as well as research. Despite being a young department, 75% of the class students are actively participating in internship program. In addition, 50% of the students seek jobs, 30% of them seek a graduate program and the rest of them go on for other opportunities.

Kirti Chandra Sahu
Ph.D – JNCASR, Bangalore

Associate Professor & HoD

Research Areas: Transition to turbulence in shear flows, spatially developing flows in complex geometries, multiphase and interfacial flows

Chandra Shekhar Sharma
Ph.D – IIT Kanpur

Assistant Professor

Hierarchical Polymer and Carbon Structures, ElectrospunNanofibers, Bio-inspired Functional Surfaces

Vinod Janardhanan
Ph.D – KIT, Germany

Associate Professor

Research Areas: Fuel cells, Heterogeneous catalysis

Anand Mohan
Ph.D – Texas A&M, USA

Associate Professor

Research Areas: Cardiovascular Mechanics, Complex Fluid Rheology

Sunil K. Maity
Ph.D – IIT Kharagpur

Associate Professor

Research Areas: Heterogeneous Catalysis, Chemical Reaction engineering, Biorefinery, Steam reforming, Oxidative steam reforming, Hydrodeoxygenation of vegetable oil, Oligomerization of olefins, Thermodynamic analysis, Process design using Aspen Plus, Techno-economic analysis

Debaprasad Shee
Ph.D – IIT Kanpur

Assistant Professor

Research Areas: Metal and metal oxide catalysts, Biomass conversion, Multifunctional catalytic material

Saptarshi Majumdar
Ph.D – IIT Kharagpur

Associate Professor

Research Areas: Molecular Simulation, Mesoscale, Thermodynamics, Drug Delivery System, Process Modeling & Development

Phanindra Varma Jampana
Ph.D – University of Alberta, Canada

Assistant Professor

Research Areas: Compressed Sensing, System Identification

Parag D. Pawar
Ph.D – Johns Hopkins, USA

Assistant Professor

Research Areas: Biophysics, Polymicrobial Biofilms, Intercellular Interactions, Bacterial Infections

Kishalay Mitra
Ph.D – IIT Bombay

Associate Professor

Research Areas: Multi-objective optimization, Optimization under uncertainty, Surrogate optimization, Data based modeling, Evolutionary Computation, Optimal Control, Supply chain optimization, planning and scheduling

Narasimha Mangadoddy
Ph.D – University of Queensland - Australia

Associate Professor

Research Areas: Mineral Processing, CFD, Multiphase Flows Fluidization, Particulate Technology

Lopamudra Giri
Ph.D – University of Iowa, USA

Assistant Professor

Research Areas: Systems biology, Live cell imaging and data mining

Devarai Santhosh Kumar
Ph.D – IIT Madras

Assistant Professor

Research Areas: Biochemical and Bioprocess development of therapeutic enzymes, Tissue Engineering

Satyavrata Samavedi
Ph.D – Virginia Polytechnic Institute and State University, USA

Assistant Professor

Research Areas: Polymeric biomaterials/ scaff olds, Tissue engineering, Stem cell differentiation, Drug delivery, Invitro disease models, Immunomodulation

Praveen Meduri
Ph.D – University of Louisville, USA

Assistant Professor

Research Areas: Nanomaterials, Energy storage, Batteries (Lithium-ion, Lithium-sulfur, metal-air), Supercapacitors, Electrochemistry of materials

Arijit Sarkar
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Structure-property relations, modeling and computational materials design, biophysics, polymer physics, hydrodynamics

Balaji Iyer Vaidyanathan Shantha
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Structure-property relations, modeling and computational materials design, biophysics, polymer physics, hydrodynamics

Books & Book Chapters

Kota Sobha and Devarai Santhosh Kumar, Chemistry and Biology of Marine Sponge Collagens, Marine Sponges: Chemicobiological and Biomedical Applications, November 2016, 359-372.

Publications
(in peer reviewed journals)

G. Karapetsas, K. C. Sahu and O. K. Matar, Evaporation of sessile droplets laden with particles and insoluble surfactants, Langmuir, 32, 6871-6881 (2016).

K. C. Sahu and R. Govindarajan, Linear stability analysis and direct numerical simulation of two layer channel flow, Journal of Fluid Mechanics, 798, 889-909 (2016).

R. Verma, S. Lal, M. Deepa, V. M. Janardhanan, and K. C. Sahu, Sodiumpercarbonate based mixed media fuel cells supported on paper with Au/NiO catalysts, ChemElectroChem, 3, 1-11(2016).

M. Susree and M. Anand, Reaction mechanisms and kinetic constants used in mechanistic models of coagulation and fibrinolysis, Mathematical Modelling of Natural Phenomena, 11, 71- 90 (2016).

M. Susree and M. Anand, Effect of platelet concentration and calcium on plasma clot absorbance, International Journal of Research in Engineering and Technology, 5, 102-104 (2016).

P. Sasmal, R. Ramu Naidu, C.S. Sastry and P. Jampana, Composition of binary compressed sensing matrices, IEEE Signal Processing Letters, 23, 1096-1100 (2016).

R. Ramu Naidu, P. Jampana and C.S. Sastry, Deterministic compressed sensing matrices: Construction via Euler Squares and applications, IEEE Transactions on Signal Processing, 64, 3566-3575 (2016).

V. C. S. Palla, D. Shee, and S. K. Maity, Conversion of n-butanol to gasoline range hydrocarbons, butylenes and aromatics, Applied Catalysis A: General, 526, 28-36 (2016).

L. Ji, P. Meduri, V. Agubra, X. Xiao, and M. Alcoutlabi, Graphene-based Nanocomposites for Energy Storage, Advanced Energy Mateials, 1502159, 1-73 (2016).

I. A. Ayhan, Q. Li, P. Meduri, H. Oh, G. R. Bhimanapati, G. Yang, J. A. Robinson, and Q. Wang, Effect of Mn_3O_4 nanoparticle composition and distribution on graphene as a potential hybrid anode material for lithium-ion batteries, RSC Advances, 6, 33022 (2016).

R. Mukkabla, P. Meduri, M. Deepa, and P. Ghosal, Durable Li-S batteries with nano-sulfur/graphite nanoplatelets composites, Chemical Engineering Journal, 303, 369-383 (2016).

A. Laha, S. Majumdar, and C. S. Sharma, Controlled Drug Release Formulation by Sequential Crosslinking of Multilayered Electrospun Gelatin Nanofiber Mat, MRS Advances, 1, 2107-2113 (2016).

A. K. Haridas, C. S. Sharma, and T. N. Rao, Caterpillar-like sub-micron $LiNi_{0.5}Mn_{1.5}O_4$ structures with site disorder and excess Mn_3+ as high performance cathode material for lithium ion batteries, Electrochimica Acta, 212, 500-509 (2016).

M. D. Prakash, S. R. K. Vanjari, C. S. Sharma, and S. G. Singh, Ultrasensitive, Label Free, Chemiresistive Nanobiosensor Using Multiwalled Carbon Nanotubes Embedded Electrospun SU-8 Nanofibers, Sensors, 16, 1354 (2016).

S. Yadav, M. P. Illa, T. Rastogi, and C. S. Sharma, High absorbency cellulose acetate electrospun nanofibers for feminine hygiene application, Applied Materials Today, 4, 62-70 (2016).

D. P. Matta, S. Tripathy, S. R. K Vanjari, C. S. Sharma, and S. G. Singh, An ultrasensitive label free nanobiosensor platform for the detection of cardiac biomarkers, Biomed Microdevices, 18, 111 (2016).

Veera A.K. Aketi, T. R. Vakamalla, M. Narasimha, G. E. Sreedhar, R. Shivakumar, and Rajan Kumar, CFD Study on the effect of Near Gravity Material on DMC treating Coal using DPM and ASM Multiphase Model, The Journal of Computational Multiphase Flows, 2016, 10.1177/1757482X16677755.

K. Doriya and D. Santhosh Kumar, Novel L-Asparaginase Enzyme Specific Free of L-Glutaminase and Urease: Study Isolation and Screening from Fungi, 3 Biotech, 6, 239 (2016).

M. Agrawal, A. R. Premlata, M. K. Tripathi, B. Karri, and K. C. Sahu, Nonspherical liquid droplet falling in air, Physical Review E., 95, 033111 (2017).

B. Nath, G. Biswas, A. Dalal, and K. C. Sahu, Migration of a droplet in a cylindrical tube in the creeping flow regime, Physical Review E., 95, 033110 (2017).

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S. Goutham, S. Kaur, K. K. Sadasivuni, J. K. Bal, N. Jayarambabu, D. Santhosh Kumar, and K. Venkateswara Rao, Nanostructured ZnO Gas Sensors obtained by green method and combustion technique, Materials Science in Semiconductor Processing, 57, 110-115 (2017).

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Publications
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Balraju Vadlakonda and M. Narasimha, Hydrodynamic study of multi-phase flow of column flotation using Electrical Resistance Tomography coupled with Pressure Transducers, XXVIII International Mineral Processing Congress (IMPC) proceedings, 1089, 1-8 (2016) (ISBN: 978-1-926872-29-2).

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Santhosh K. Varanasi and P. Jampana, Parameter Estimation and Model Order Identification of LTI Systems, Dynamic Control of Process Systems, IFAC Papers Online, 47, 1002-1007 (2016).

M. Kakunuri, S. Kaushik, A. Saini, and C. S. Sharma, SU-8/MWCNT derived Electrospun Composite Carbon Nanofabric as a High Performance Anode Material for Lithium Ion Battery, ECS Transactions, 72, 69-74 (2016).

A. Laha, C. S. Sharma, and S. Majumdar, Electrospun gelatin nanofibers as drug carrier: effect of crosslinking on sustained release, Materials Today: Proceedings 3, 3484–3491 (2016).

P. Mittal and K. Mitra, Energy-Noise Trade-Off to Optimize the Total Number and the Placement of Wind Turbines on Wind Farms: A Hybrid Approach, IEEE Indian Control Conference, 129-136 (2017).

D. P. Pantula, M. S. Soumitri, and K. Mitra Knowledge Discovery and Development of Smart Neuro-Fuzzy Surrogates for Online Optimization of Computationally Expensive Models, Simultaneous IEEE Indian Control Conference, 260-267(2017).

M. S. Soumitri and K. Mitra, Novel Sample Size Determination Methods for Parsimonious Training of Black Box Models, IEEE Indian Control Conference, 39-46 (2017).

Phanindra Jampana, Coherence of Randomly Pre-conditioned Matrices, Proceedings of the IEEE Indian Control Conference, 18-21 (2017).

Funded Research Projects 2016-17

Balaji Iyer Vaidyanathan Shantha, Modeling and Simulation of Bio-inspired Particle-Polymer Hybrid Material Networks, DST, 2016, Rs. 43.00 Lakhs.

Saptarshi Majumdar, Electrospun Nano-fiber as Carrier for Controlled Release of Amphotericin-B and Piperine: Connecting Drug-Polymer Fiber Properties to Release Kinetics, DST-Nano-mission, 2016, Rs. 45.00 Lakhs.

Arijit Sarkar, Polymer Grafted Nanoparticle Suspensions: Topological Effects, Free Volume, Percolation, DST SERB, 2016.

Chandra Shekhar Sharma, Direct Recycling of Polystyrene Waste Objects using Citrus Peel for Oil Spills Remediation, DST-TSDP, May 2016, Rs. 37.33 Lakhs.

Narasimha Mangadoddy, Estimation of Hydrodynamics of Large Scale (2 m Dia) Column Flotation using Semi-Empirical and CFD Models, TATA Steel, May 2, 2016, Rs. 25.00 Lakhs.

Chandra Shekhar Sharma, Resorcinol-Formaldehyde Derived, Graphitized Carbon Xerogel as High Capacity Anode for Lithium Ion Battery, SERB Young Scientist Scheme, June 2016, Rs. 30.86 Lakhs.

Kishalay Mitra, Development of Computational Software Integrating Multilevel Image Data Analysis: Towards Efficient Clinical Practices and Advanced Biomolecular Research In Ophthalmology, DBT, August 1, 2016, Rs. 54.00 Lakhs.

Satyavrata Samavedi, Bi-Functional Co-Electrospun Scaffolds for Combating Inflammation in the Context of Tissue Regeneration, DST SERB, September 2016, Rs. 54.98 Lakhs.

Narasimha Mangadoddy, Simulating the Flow Field in Both Lab Scale and Plant Scale Stirred Tanks Using Ansys's Fluent, Dr Reddy's Labs, September 2016, Rs. 4.85 Lakhs.

Anand Mohan, Computational Fluid Dynamics, Dr Reddy's Labs, October 2016, Rs. 5.00 Lakhs.

Narasimha Mangadoddy, Developing a Process and Pilot Scale Unit for the Recovery of Chrome and Other Value Added Products from Chrome Ore Process Residue (CORP), UAY-MHRD, October, 2016, Rs. 400.00 Lakhs.

Kishalay Mitra, Optimization of Mechanical Properties of Hot Rolled Steel Using Evolutionary as Well as Classical Approaches, TATA STEEL, December 17, 2016, Rs. 14.00 Lakhs.

Sunil K. Maity, Pilot-Scale Production of Green Diesel from Isolated High-Yielding Microalgae Strains: Process Optimization and Engine Performance, MHRD-IMPRINT, 2017, Rs. 324.00 Lakhs.

Devarai Santhosh Kumar, Semi-Pilot Scale Production of Lipase by Solid State Fermentation (SSF) For Transesterification of Biodiesel Analysis, DST SERB, 2017, Rs. 50.00 Lakhs.

Anand Mohan, Mathematical Modelling of Blood Coagulation, DST, January 2017, Rs. 14.00 Lakhs.

Sunil K. Maity & Debaprasad Shee, Conversion of Furfural to Tetrahydrofuran (THF) Using Bulk Metals Catalyst, Role, SGE consulting Inc, USA, March 23, 2017, Rs. 7.5 Lakhs.

Narasimha Mangadoddy, Development of a Multi-Component Classification Model for Industrial Hydrocyclones, SERB-DST, February 3, 2017, Rs. 44.00 Lakhs.

Chandra Shekhar Sharma, Electrospun Nanofibers for Controlled drug Release, DST Nanomission, Approved, Rs. 45.00 Lakhs.

Chandra Shekhar Sharma, Bio-inspired Engineering of Nano-Hierarchical Tissue Architecture, DST Nanomission, Approved, Rs. 60.72 Lakhs.

Chandra Shekhar Sharma, Hierarchical Nanostructured Carbon Materials for High Rate

and High Performance Electrodes for automotive Batteries and Supercapacitors, IMPRINT-MHRD, Approved, Rs. 260.67 Lakhs.

Chandra Shekhar Sharma, Development of 3-D Printed Nanofibers Based Bioreactor, IMPRINT, Approved, 132.37.

Satyavrata Samavedi, The Role of Intracellular Calcium Signaling in Matrix-Mediated Differentiation of Mesenchymal Stem Cells, DBT, Approved.

Talks Given in National / International Conferences

Chandra S. Sharma, Electrospun Nanofibers for Healthcare and Energy Applications, Department of Materials Science & Metallurgy, University of Cambridge, 5 August 2016.

Jophin G. Joseph, Sailaja Nanda, Sheetal Vennamalla, Govardhan Bhure, Ranjana Singh, Soumya Jana, and Lopamudra Giri, Integrated Quantification Based on Confocal Imaging: Cell Crowding Modulates Heterogeneity in GPCR-Mediated Calcium Oscillation, 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Florida, USA, August 2016.

Chandra S. Sharma, Shital Yadav, and Illa M. Pujitha, High Absorbency Electrospun Cellulose Acetate Nanofibers for Feminine Hygiene Applications, International conference on Functional Nanomaterials (IC-FNM 2016), IIEST, Shibpur, 28-29 September 2016.

Chandra S. Sharma, Role of Vigilance and Our Responsibility in Eradicating the Corruption, Vigilance Awareness Week, IIT Ropar, 3 November 2016.

Chandra S. Sharma, Nanotechnology: Solving the Problems in Wide Spectrum, Dept. of Electronics, Kurukshetra University, 4 November 2016.

Kishalay Mitra, Is Optimization Time-feasible for Computationally Expensive Models?, 4th International Conference for Advanced Materials and Materials Processing (ICAMMP-IV), IIT Kharagpur, 5-7 November 2016.

Narasimha Mangadoddy, Multiphase CFD Modelling of Mineral Separators Performance: Validation Against Imaging and Tomography Data, 70th Annual Technical Meeting and the National Metallurgists Day (NMD-AMT 2016), IIT Kanpur, Lucknow, 11-13 November 2016.

Chandra S. Sharma, Electrospun Cellulose Acetate Nanofibers for Feminine Hygiene Applications, ChEmference, 7th National Level Annual Symposium of Chemical Engg. Research Scholars, IIT Gandhinagar, 3-4 December 2016.

Teja Reddy Vakamalla, M. Narasimha, and P. Mandakini, Turbulent Vortex Core Flow Behavior in Hydrocyclones: Classification Performance Evaluation using CFD, CompFlu 2016, Hyderabad, 12-14 December 2016.

Anulekha K. Haridas, Neha Y. Hebalkar, Chandra S. Sharma, and Tata N. Rao, Electrospun SnO_2/LTO Composite Hollow Fibers as High Performance Anode Materials for Lithium Ion Batteries, International Conference on Complex Fluids (CompFlu 2016), Hyderabad, 12-14 December 2016.

Kishalay Mitra, Optimization and Optimal Control, TEQIP-II Winter School on Optimization and Optimal Control, College of Engineering Pune, 15-21 December 2016.

S. Samavedi and M. S. Hahn, A 3D Hydrogel-Based Biomaterial System to Study the Progression of Inflammation in Osteoarthritis, Soft Matter Young Investigator meeting, Goa, December 2016.

Balaji V.S. Iyer, Victor V. Yashin, and Anna C. Balazs, Mechanical Response of Nanoparticle-Polymer Hybrid Networks Cross-Linked by Slip and Catch Bonds, ChEmference 2016, Gandhinagar, 3-4 December 2016.

Phanindra Jampana, Coherence of Randomly Pre-Conditioned Matrices, IEEE Indian Control Conference, IIT Guwahati, 4-6 January 2017.

Teja Reddy Vakamalla and Narasimha Mangadoddy, Analysis of Multi-Phase Turbulence Inside a Hydrocyclone Using Dense Slurry CFD model, Mineral Processing Technology (MPT)-2017, Mahabhalipuram, 1-3 February 2017.

Kishalay Mitra, Evolutionary and Classical Multi-Objective Algorithms, TEQIP-II Workshop on Engineering Optimization using MATLAB, Gayatri Vidya Parisad College of Engineering, Vizag, 15-19 February 2017.

Chandra S. Sharma, How to Start a Start-up?, 3rd National Workshop on MEMS/NEMS and Theranostics Devices, Centre for Nanotechnology, IIT Guwahati, 21-23 February 2017.

Chandra S. Sharma, Photolithography and Electrospinning, 3rd National Workshop on MEMS/NEMS and Theranostics Devices, Centre for Nanotechnology, IIT Guwahati, 21-23 February 2017.

Kishalay Mitra, Optimization in Biology, TEQIP II Workshop on Biomedical Imaging and Informatics, Indian Institute of Technology Hyderabad, Hyderabad, 5-9 March 2017.

M. Anand, CFD Simulation as an Alternate Diagnostic Tool for Blocked Artery, International Conference on Biotechnology Bioengineering – Trends (ICBT), Hyderabad INDIA, March 2017.

Invited Presentations

Role of surface engineering on liquid/surface interactions, Dr. Tanmoy Maitra, Postdoctoral Research Scholar, Stanford University, 3 August 2016.

Conventional Zeolites and Hierarchical Materials for Methanol to Olefins and Biotransformations, Dr. Venkata Ramana Reddy, Marthala, Postdoctoral Research Associate, Department of Chemical and Bioengineering, ECRC, University of Erlangen-Nuremberg (FAU), Germany, 24 August 2016.

Workshops / Symposiums Organised

Kishalay Mitra, Winter School on Optimization and Optimal Control organized for the Department of Instrumentation and Control, College of Engineering Pune in collaboration with the Centre of Excellence in Image and Signal Processing of COEP, 15-21 December 2016.

Balaji V. S. Iyer, Session Chair for Polymer and Polymer Composites Session of CompFlu2016, held at IIIT Hyderabad. It was organized jointly by IIT Hyderabad, TCIS, IIIT Hyderabad and UOH.

Other Events

TEQIP Workshop on MEMS & NEMS (Fundamentals, Design and Fabrication), Chandra S. Sharma, 21-26 October 2016.

TEQIP Workshop on Compressive Sensing and Applications, Phanindra Jampana, 25-27 October 2016.

10 days GIAN Course on Biomaterials Engineering and Digital Manufacturing, (Expert Foreign Faculty: Prof. Seeram Ramakrishna, NUS), Chandra S. Sharma, 12-21 December 2016.

TEQIP workshop on CFD, Narasimha Mangadoddy, Vinod Janardhanan, Raja Banerjee, Venkata Subbaiah, 23-25 February 2017.

TEQIP workshop on Biomedical Imaging and Informatics, Lopamudra Giri, 5-9 March 2017.

Awards / Recognitions

Chandra S. Sharma, IEI Young Engineer Award 2016 (Chemical Engg. Division).

Chandra S. Sharma, SERB-IUSSTF Research Fellowship 2016.

Chandra S. Sharma, Member, Indian National Young Academy of Sciences (INYAS)-2017-21.

CHEMISTRY

The Department of Chemistry housed 12 faculty members, 60+ research scholars and 45+ two-year M.Sc. students. The department has been conducting cutting-edge research in contemporary topics in Physical, Organic and Inorganic Chemistry. Various state-of-the-art research facilities such as 400 MHz NMR, ESR, HRMS, Single Crystal- and Powder- XRD, CD, Fluorescence/ lifetime and Raman spectrometers, Atomic force microscopy (with conductive, electrostatic force, magnetic force, surface potential, nanolithography modes), Gas Chromatography-Mass Spectrometer, HPLC, etc. are available in the department.

Melepurath Deepa
Ph.D – Delhi University
Associate Professor & HoD
Research Areas: Applied Electrochemistry

D. S. Sharada
Ph.D – University of Hyderabad
Associate Professor
Research Areas: Synthetic Methodologies, Heterocyclic Chemistry and Medicinal Chemistry

Faiz Ahmed Khan
Ph.D – University of Hyderabad
Professor

Research Areas: Transition Metal-mediated reactions in organic synthesis, Discovery of New Methodologies and Control of Stereochemistry in organic synthesis, Chemical Synthesis in Ionic Liquids, and Supported Catalysts, Synthesis of Natural and aesthetically pleasing.

Bhabani Shankar Mallik
Ph.D – IIT Kanpur
Associate Professor
Research Areas: Computational Chemistry, Molecular Dynamics

Ch. Subrahmanyam
Ph.D – IIT Madras
Professor
Research Areas: Catalysis, Nanomaterials and Energy Systems

Surendra Kumar Martha
Ph.D – IISc, Bangalore
Assistant Professor
Research Areas: Materials Electrochemistry with special emphasis on Lead-acid, Li-ion, Sodium ion batteries and Supercapacitors

Gedu Satyanarayana
Ph.D – IISc, Bangalore
Associate Professor
Research Areas: Transition-metal catalysis, Development of new methodology and Total synthesis and drug diversity oriented synthesis

Somnath Maji
Ph.D – IIT Bombay
Assistant Professor

Research Areas: Synthetic Coordination / Bio-Inorganic / Organometallic Chemistry. Metal catalyzed Water Splitting / Carbon Dioxide Reduction / Hydrogen Generation. Applications of molecular catalysts in functional devices for production of solar fuels

Tarun K. Panda
Ph.D – Free University - Berlin, Germany
Associate Professor
Research Areas: Main group chemistry, Coordination chemistry, Lanthanide chemistry, Homogeneous catalysis, X-ray Crystallography and structure analysis

Jai Prakash
Ph.D – IIT Delhi
Assistant Professor

Research Areas: Inorganic Chemistry, Strongly Correlated Materials for Thermoelectric & Superconducting Applications, Small Molecule Crystallography, Metal Chalcogenides & Intermetallics

G. Prabusankar Ganesan
Ph.D – IIT Bombay
Associate Professor
Research Areas: Inorganic Synthesis, Organometallic Chemistry & Catalysis

Surajit Maity
Ph.D – IIT Bombay
Assistant Professor
Research Areas: Physical Chemistry, Spectroscopy and Dynamics of molecules, ions and radicals

Patents Filed

Surendra K. Martha, Naresh Vangapally, S. A. Gaffoor, High performance lead-acid batteries and the pastes therefor, Indian Patent App. No. 201741007000 (Filing Date: February 28, 2017).

Publications

(in peer reviewed journals)

P. N. Kumar, A. Kolay, S.K. Kumar, P. Patra, A. Aphale, A.K. Srivastava, and M. Deepa, Counter electrode impact on quantum dot solar cell efficiencies, ACS Applied Materials & Interfaces, 8, 27688-27700 (2016).

P.N. Kumar, R. Narayanan, S.Laha, M. Deepa, and A.K. Srivastava, Photoelectrochromic cell with a CdS quantum dots/graphitic-nanoparticles sensitized anode and a molybdenum oxide cathode, Solar Energy Materials and Solar Cells, 153, 138-147 (2016).

P. Subramanyam, P.N. Kumar, M. Deepa, Ch. Subrahmanyam, and P. Ghosal, Bismuth sulfide nanocrystals and gold nanorods increase the photovoltaic response of a TiO_2/CdS based cell, Solar Energy Materials and Solar Cells, 159, 296-306 (2016).

R. Mukkabla, P. Meduri, M. Deepa, and P. Ghosal, Durable Li-S batteries with nano-sulfur/graphite nanoplatelets composites, Chemical Engineering Journal, 303, 369-383 (2016).

L. Mahendar and G. Satyanarayana, Copper catalyzed coupling of protecting group free and sterically hindered 2-bromobenzyl tertiary alcohols with phenols and anilines: facile synthesis of xanthenes and dihydroacridines, RSC-Adv. 6, 20588–20597 (2016).

B. Suchand and G. Satyanarayana, Palladium-Catalyzed Environmentally Benign Acylation, J. Org. Chem. 81, 6409–6423 (2016).

L. Mahendar and G. Satyanarayana, Domino [Pd]-Catalysis: One-Pot Synthesis of Isobenzofuran-1 (3H)-ones, J. Org. Chem. 81, 7685–7691 (2016).

A. G. K. Reddy and G. Satyanarayana, Metal-Free Domino One-Pot Decarboxylative Cyclization of Cinnamic Acid Esters: Synthesis of Functionalized Indanes, J. Org. Chem. 81, 12212–12212 (2016).

A. Harinath, S. Anga, and T. K. Panda,Alkali Metal CatalyzedDehydro-coupling of Boranes and Amines Leading to the Formation of B-N Bond, RSC Advances, 6, 35648-35653 (2016).

S. Anga, Y. Sarazin, J-F. Carpentier and T. K. Panda, Alkali Metal-Catalyzed Cross-Dehydrogenative Couplings of Hydrosilanes with Amines, ChemCatChem, 8, 1373-1378 (2016).

R. Vinayak, A. Harinath, C. J. G-García, T. K. Panda, SamiaBenmansour, and H. P. Nayek,Solvent Modulated Assembly of Two Ni(II) Complexes: Syntheses, Structures and Magnetic Properties, Chemistry Select, 1, 6532-6539 (2016).

J. Bhattacharjee, S. Das, R. K. Kottalanka, and T. K. Panda, Hydroamination of Carbodiimides, Isocyanates, and Isothiocyanates by Bis(phosphinoselenoic amide) Supported Titanium Complex, Dalton Trans, 45, 17824-17832 (2016).

J. Bhattacharjee, M. Sachdeva, T. K. Panda, and Z. Anorg, Lanthanides Mediated Oxidative Cross Coupling of Benzylalcohols and Various Amines to form corresponding Imines, Allg. Chem. 642, 937-940 (2016).

S. Anga, I. Banerjee, H. P. Nayek and T. K. Panda, Alkali Metal Complexes Having Sterically Bulky Bis-Iminopyrrolyl Ligands – Control of Dimeric to Monomeric Complex, RSC Advances, 6, 80916-80923 (2016).

S. Anga, J-F Carpentier, T. K. Panda, T. Roisnel, and Y. Sarazin, Calcium Complexes with Imino-phosphinanilido Chalcogenide Ligands for Heterofunctionalisation Catalysis, RSC Advances, 6, 53835-53843 (2016).

S. Saha, A. Harinath, T. K. Panda, and H. P. Nayek, Schiff-base Supported Heterobicyclic Monomeric Boronates, J. Organomet. Chem., 818, 37-41 (2016).

S. Anga, J. Bhattacharjee, I. Banerjee, H. P. Nayek, and T. K. Panda, Calcium Complexes Having Different Amidinate Ligands - Synthesis and Structural Diversity, Chemistry Select, 1, 2014-2020 (2016).

J. Bhattacharjee, M. Sachdeva, I. Banerjee, and T. K. Panda, Zinc Catalyzed Guanylation Reaction of Amines to Carbodiimides/Isocyanate Leading to of Guanidines/Urea Derivatives Formation, J. Chem. Sci., 128, 875-881 (2016).

S. Anga, I. Banerjee, and Tarun K. Panda,Amidinate Ligands in Zinc Coordination Sphere Synthesis and Structural Diversity, J. Chem. Sci.,128, 867-873 (2016).

Moulali Vaddamanu, Ramesh Karupnaswmy, Katam Srinivas, and Ganesan Prabusankar, Facile Access to Diselenide Containing Macrocyclic Ring from Diselone, Chemistry Select, 1, 4668-4671 (2016).

Archana Prasad, Gembali Raju, Vishwanath Sivalingam, Amandeep Girdhar, Ganesan Prabusankar, and Basant K Patel, A bi-functional clip imidazolium derivative of acridine shows anti-TDP-43 aggregation effect in ALS disease models, Scientific Reports, 6:39490, 1-14 (2016).

A. Sagar, VenkataNagarjunaBabu, Anand H. Shinde, and D. S. Sharada,A Metal-free CyclicIminium Induced One-pot Double Annulation Cascade: Access to Dihydroisoquinolinium (DHIQ) Salts, Org. Biomol. Chem. 14, 10366-10370 (2016).

D. S. Sharada, Anand H. Shinde, S. M. Patel, and S. Vidyacharan, Scaffold Diversity through aBranching Double Annulation Cascade Strategy: An Iminium Induced One-pot Synthesis ofDiverse Fused Tetrahydroisoquinoline (THIQ) Scaffolds, J. Org. Chem. 81, 6463-6471 (2016).

Sohag Biswas and Bhabani S. Mallik, Proton transfer from water to anion: Free energy profile from first principles metadynamics simulations; Journal of Molecular Liquids, 219, 810-814 (2016).

Sohag Biswas, Teesta Dasgupta, and Bhabani S. Mallik, Proton transfer from water to ketyl radical anion: Assessment of critical size of hydrated cluster and free energy barrier in solution from first principles simulations, Chemical Physics, 477, 46-51 (2016).

Ben A. Johnson, Hemlata Agarwala, Travis A. White, Edgar Mijangos, Somnath Maji, and Sascha Ott, Judicious Ligand Design in Ruthenium Polypyridyl CO_2 Reduction Catalysts to Enhance Reactivity by Steric and Electronic Effects, Chemistry-A European Journal., 22, 14870-14880 (2016) (Electrocatalysis: Hot Paper and Frontispiece).

Liisa J. Antila, Pedram Ghamgosar, Somnath Maji, Haining Tian, Sascha Ott, and Leif Hammarström, Dynamics and Photochemical H_2 Evolution of Dye–NiO Photocathodes with a Biomimetic FeFe-Catalyst, ACS Energy Letters., 1, 1106-1111 (2016) (ACS Author Choice).

S. Maity, P. Ottiger, F. A. Balmer, R. Knochenmuss and S. Leutwyler, Intermolecular Dissociation Energies of Dispersively Bound 1-Naphthol·Cycloalkane Complexes, J. Chem. Phys.145, 244314 (2016).

S. Maity, R. Knochenmuss, C. Holzer, G. Féraud, J. Frey, W. Klopper and S. Leutwyler,Accurate Dissociation Energies of Two Isomers of the 1-Naphthol-Cyclopropane Complex, J. Chem. Phys.,145, 164304 (2016).

B. Sichand and G. Satyanarayana, Palladium-Catalyzed Acylations: One-Pot Synthesis of Indenones, J. Org. Chem. 82, 372–381 (2017).

Madhan Ramesh, GanesanPrabusankar, and GalmariVenkatachalam, Ru(II) mediated C H activation of 1-(biphenylazo)naphthol: Synthesis and catalytic evaluation for transfer hydrogenation of ketones, Inorganic Chemistry Communications, 79, 89-94 (2017).

S. Vidyacharan, ArumugavelMurugan, Ruma Ghosh, and D. S. Sharada, Metal-Free Regioselective Dual C-H Functionalization in Cascade Fashion: Access to Isocryptolepine Alkaloid Analogues, ChemSelect., 2, 3511–3515 (2017).

S. Vidyacharan, C. Adhikari, V. S. Krishna, R. S. Reshma, D. Sriram, and D. S. Sharada, ARobust Synthesis of Functionalized 2H-Indazoles Via Solid State Melt Reaction (SSMR) and Their Antitubercular Activity, Bioorg. Med. Chem. Lett., 27, 1593-1597 (2017).

Anand H.Shinde, SagarArepally, Mayur D. Baravkar, and D. S. Sharada, Nickel-CatalyzedAerobic Oxidative Isocyanide Insertion: Access to Benzimidazoquinazoline Derivatives viaSequential Double Annulation Cascade (SDAC) strategy, J. Org. Chem. 82, 331-342 (2017).

Sohag Biswas andBhabani S. Mallik, A delicate case of unidirectional proton transfer from water to an aromatic heterocyclic anion, Physical Chemistry Chemical Physics, 18, 29979 (2017).

Sohag Biswas and Bhabani S. Mallik, Ultrafast Vibrational Spectroscopy of Aqueous Solution of Methylamine from First Principles MD Simulations, Chemistry Select, 2, 74 (2017).

Sohag Biswas and Bhabani S. Mallik, Time-dependent Vibrational Spectral Analysis of First Principles Trajectory of Methylamine with Wavelet Transform, Physical Chemistry Chemical Physics, 19, 9912 (2017).

Th. Dhileep Reddy and Bhabani S. Mallik, Protic Ammonium Carboxylate Ionic Liquids: Insight into Structure, Dynamics and Thermophysical Properties by Alkyl Group Functionalization, Physical Chemistry Chemical Physics, 19, 10358 (2017).

S. Krishna Kumar, Sourav Ghosh, Partha Ghosal, and Surendra K. Martha,Synergistic effect of 3D electrode architecture and fluorine doping of $Li_{1.2}Ni_{0.15}Mn_{0.55}Co_{0.1}O_2$ for high energy density lithium-ion batteries, J. Power Sources, 356, 115-123 (2017).

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R. Knochenmuss, S. Maity, G. Féraud and S. Leutwyler, Measuring Intermolecular Binding Energies by Laser Spectroscopy, Chimia, 71, 7-12 (2017).

Funded Research Projects 2016-17

D. S. Sharada, Novel Cascade Annulations Leading to Biologically Relevant and Diverse Heterocyclic Frameworks via Cross-Dehydrogenative Couplings, Redox Reactions, and C-H Activations, DST (SERB), September 22, 2016, Rs. 35.5 Lakhs.

Tarun K. Panda, Development of 100% Atom Economical Catalytic Transformations by Electropositive Metal Catalysts – Collaboration Kick-starter Program (CKP), JICA FRIENDSHIP, November 15, 2016, Rs. 52.00 Lakhs.

Jai Prakash, Early Career Research Award, DST-SERB, 2017-2020, Rs. 47.00 Lakhs.

Surendra K. Martha, In Situ Synthesis of High Capacity Silicate Cathodes for Lithium-Ion Batteries: An Integrated Approach, Naval Research Board (DRDO), March 2017, Rs. 29.84 Lakhs.

M. Deepa, India-UK Center for Education and Clean Energy (IUCERCE), DST, March 2017, Rs. 75.00 Lakhs.

Talks Given in National / International Conferences

M. Deepa, Quantum Dot Solar Cells Muscling in on Frontrunners among Third Generation Solar Cells, 8th Indo-German Frontiers of Engineering Symposium, Potsdam, May19-22, 2016.

G. Satyanarayana, Tara Government Degree College, Rashanthnagar, Sangareddy, Medak, Telangana 502001.

G. Satyanarayana, The Ideal College of Arts and Sciences, Kakinada, Andhra Pradesh, India.

G. Satyanarayana, Kakatiya University is a public university, Warangal, Telangana, India.

Tarun K. Panda, Cross dehydro-coupling Reactions Leading to Element - Element Bonds Mediated by Alkali Metal Catalysts, Rare Earth Symposium, Osaka University, Osaka, Japan, June 4, 2016.

Surendra K. Martha, Lithium Manganese rich based NMC oxide cathodes for advanced lithium ion batteries, Indo-US science and technology forum, Recent advances in multiscale, multiphysics, analysis of energy conversion in lithium ion batteries, VMCC auditorium, IIT Bombay, June 17-19, 2016.

Tarun K. Panda, Cross dehydro-coupling Reactions Leading to Element - Element Bonds Mediated by Alkali Metal Catalysts, Osaka City University, Osaka, Japan, June 23, 2016.

Tarun K. Panda, Hetero-functionalization Reactions Mediated by Alkaline-Earth and Early Transition Metal Complexes, Hiroshima University, Hiroshima, Japan, June 24, 2016.

Tarun Panda, Hetero-functionalization Reactions Mediated by Alkaline-Earth and Early Transition Metal Complexes, Kanazawa University, Kanazawa, Japan, June 27, 2016.

Tarun Panda, Hetero-functionalization Reactions Mediated by Alkaline-Earth and Early Transition Metal Complexes, Osaka University, Osaka, Japan, June 28, 2016.

Surendra K. Martha, Lithium –manganese rich based NMC cathode materials for high energy density lithium-ion batteries, 15th Asian Conference on Solid State Ionics (ACSSI-2016) being organized by IIT Patna, November27-30, 2016.

G. Prabusankar, Luminescent Drugs For Anti-Aggregation Of Soft Materials, International Symposium on Functional and Applications of Soft/Hard Materials, Ritsumeikan University, Kusatsu, Japan, January 20, 2016 to January 22, 2017.

Invited Presentations

Aggregation-Controlled Luminescence in Mesogenic Gold Complexes in the Solid and Liquid-Crystalline Phases, Prof. Osamu Tsutsumi, Polymer Materials Chemistry, Department of Applied Chemistry, Ritsumeikan University, JAPAN, August 11, 2016.

Process R&D in Chemical Development of New Chemical Entities and Generic Active Pharmaceutical Ingredients and Talent for Tomorrow: Transforming Scientific Excellence to Employability, Dr. Vilas Dahanukar, Chief Scientist-Process R&D at the integrated Product development Organization, Dr. Reddy's Laboratories Ltd., January 28, 2017.

Workshops / Symposiums Organised

Dr. Surajit Maity organized an In-House Symposium 2017 at the Department of Chemistry, IIT Hyderabad (IHS2017), January 28, 2017.

Other Events

Drs. M. Deepa, Ch. Subrahmanyam, S. K. Martha organized Six days TEQIP workshop on Electrochemical Energy Conversion and Storage (ECS-2016) at IIT Hyderabad, May 9-14, 2016.

CIVIL ENGINEERING

Our vision is to be the front runners in addressing the current and future needs of society in 'all things Civil'. That is, in developing and constructing advanced and robust structures, laid on better foundations, in satisfying the water needs of the country, and help develop a cleaner and healthier environment free from chemical and biological pollutants. The department will focus on both applied and basic research, provide solutions for immediate use, and generate new science that will help drive the future evolution of Civil Engineering (CE). Industry interaction and academic exchanges will become an integral characteristic of our department.

The Department of Civil Engineering currently has 17 faculty members. The department offers a Bachelor of Technology (B.Tech) program in Civil Engineering, and two year and three year Master of Technology (M.Tech) programs in three specializations: Structural Engineering, Geotechnical Engineering, and Environmental and Water Resource Engineering. The three year program is 'thesis by-research' and allows students to gain in-depth research exposure. The department also offers a Doctor of Philosophy (Ph.D) program in five specializations: Structural Engineering; Transportation Engineering; Geotechnical Engineering; Water Resources Engineering; and Environmental Engineering. The department is developing state-of-the-art laboratory facilities in each specialization. Key advanced equipment have already been procured and labs will be used both for research and undergraduate teaching. Current facilities include laboratories in Construction Materials, Structural Engineering (Concrete and Structural steel), Steel composite structures (Steel-Concrete and Steel-FRP), Structural steel retrofitting techniques, Advanced Cement-based Materials, High Performance Concrete, Structural Materials, Large Scale Structures, Computational Structural Mechanics, Pavement and Traffic Engineering, Advanced Geotechnical Testing, Geosynthetics, Advanced Soil Dynamics, Ground Characterization, Computational Geotechnical, Water Quality Analysis, Water and Waste Water, Solid waste, Hazardous waste, Trace Contaminants, Microbiology, Air Quality Monitoring, Hydraulic Engineering, Hydrology, Geographic Information Systems (GIS). In addition, the faculty of Civil Engineering are actively involved in multidisciplinary research and training in the area of sustainable development under 'Center of Excellence in Sustainable Development' funded by MHRD. With our current and evolving faculty strength, motivated community, and exceptional laboratory facilities, we have all the necessary ingredients in realizing our vision and are confident about it.

B Umashankar
Ph.D – Purdue University, USA

Associate Professor

Research Areas: Foundation Engineering, Reinforced Soil, Soil-Structure Interaction, Recyclable Materials in Geotechnics

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Associate Professor

Research Areas: Pavement Geotechnics, Geosynthetic Reinforced Foundations, Sustainable Design of Soil Structures, Soil Stabilization, Soil/Rock Instrumentation, Numerical Modeling of Geosystems

Kolluru V.L. Subramaniam
Ph.D – Northwestern University, USA

Professor

Research Areas: Concrete Material and Structures; Structural Health Monitoring; Material Characterization

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Ph.D – Missori University of Science & Technology - Rolla, USA

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Research Areas: Reinforced Concrete, Prestressed Concrete, Precast Systems, FRP Composites

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Research Areas: Affordable Housing, Light Gage Steel, Geometric Imperfection Studies, Parallel Flange Beams, High strength Steel, Composite Structures, CFRP Retrofitting, Wind Engineering, CFRP Retrofitting

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Research Areas: Mechanics of Laminated Composites, Computational Mechanics, Fracture and Damage Mechanics

Shashidhar
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Research Areas: Bioremediation, Contaminant Transport Modeling, Environmental Hydraulics, Hydrology, Remote Sensing and GIS applications, Waste water treatment, Solid and Hazardous waste management

Surendra Nadh Somala
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Research Areas: Engineering Seismology, Earthquake Engineering, Fracture Mechanics, Structural Dynamics, Bridge Engineering, Induced Seismicity, Structural Health Monitoring

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Research Areas: Computational Geomechanics, Reliability Based Design, Reinforced Soil Walls, Municipal Solid Waste Landfills, Soil Dynamics and Earthquake Resistant Design of Retaining Structures and Rock Mechanics

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Research Areas: Water treatment, wastewater treatment, waste management, biofuel

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Research Areas: Hydrogeologic Characterization, Groundwater Modeling, RsAndGis In Groundwater, Unsaturated Hydrology

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Ph.D – The Pennsylvania State University, USA

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Research Areas: Rainfall runoff modelling; Uncertainty analysis; Prediction in ungauged basins; Climate and land use change impact on water resources; Multi-objective optimization

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Ph.D – IIT Bombay

Assistant Professor

Research Areas: Driver and Pedestrian Behavioral Modeling, Traffic Safety and Accident Analysis, Traffic Operation and Simulation, Intelligent Transportation Systems, Statistical Modelling and Classification Techniques, Human Factors

Anil Agarwal
Ph.D – Purdue University, USA

Assistant Professor

Research Areas: Structural Fire Safety; Steel Structures; Steel-Concrete Composite Structures; FRP Structures; Structural Stability

Satish Kumar Regonda
Ph.D – University of Colorado at Boulder

Assistant Professor

Research Areas: Hydroclimatology, Ensemble streamflow forecasting, Urban hydrology, Statistics, Data sciences

Asif Qureshi
Ph.D – Swiss Federal Institute of Technology, Switzerland

Assistant Professor

Research Areas: Environmental Science

VISITING FACULTY

Prof M R Madhav

Prof D Chandrasekharam

Patents Filed

V.V. Rangarao, K.V.L. Subramaniam, S. Suriya Prakash, 'Lateral Reinforcement System and Method for Concrete Structures' U.S. Patent and Trademark Office (USPTO) Application Number 15/168,116 (2016).

Book & Book Chapters

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K. B. V. N. Phanindra (2016). Groundwater Resource Management using GIS Tools. In M. Thangarajan and Vijay P. Singh (Eds), Groundwater Assessment, Modeling, and Management. pp. 439-453, CRC Press.

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Amritam Rajagopal, Finite element simulation of thermoelestic effective properties of periodic masonry with porous bricks, Springer Singapore

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C. Hari Prasad, M. Rajashekar, and B. Umashankar, Preparation of Uniform Sand Specimens using Stationary Pluviation and Vibratory Methods, Geotechnical and Geological Engineering, Springer, 34 (6) 1909-1922 (2016).

V. K. D. Mohan, H. Kim, U. Balunaini, and M. Prezzi, Pullout capacity of ladder-type metal reinforcements in tire shred-sand mixtures, Construction and Building Materials, 113, 544-552 (2016).

B. Durga Prasad, C. Hariprasad, and B. Umashankar, Load-settlement response of Square Footing on Geogrid Reinforced Layered Granular Beds, International Journal of Geosynthetics and Ground Engineering, 2 (2016).

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B. Biswal, Dynamic hydrologic modeling using the zero-parameter Budyko model with instantaneous dryness index, Geophysical Research Letters, 43 (18), 9696-9703.

B. Biswal and R. Singh, Incorporating channel network information in hydrologic response modelling: Development of a model and inter-model comparison, Advances in Water Resources 100, 168-182.

S. Selvaraj, M. Madhavan, Enhancing the structural performance of steel channel sections by CFRP strengthening, Thin-Walled Structures, 108, 109-121 (2016).

S. Selvaraj, M. Madhavan, and S.U. Dongre, Experimental Studies on Strength and Stiffness Enhancement in CFRP-Strengthened Structural Steel Channel Sections under Flexure, Journal of Composites for Construction (ASCE), 20-6, 109-121 (2016).

Ritu Gothwal and Shashidhar, Occurrence of high levels of fluoroquinolones in aquatic environment due to effluent discharges from bulk drug manufacturers, ASCE, Journal of Hazardous, Toxic and Radioactive Waste, 21, 05016003, 1-8 (2016)10.1061 / (ASCE)HZ.2153-5515.0000346.

Deshmukh and R. Singh, Physio-climatic controls on vulnerability of watersheds to climate and land use change across the United States, Water Resources Research, 52, 8775-8793 (2016)

A.V. Nasedkin, A.A. Nasedkina and Amirtham Rajagopal, Finite Element Simulation of Thermoelastic Effective Properties of Periodic Masonry with Porous Bricks, Wave Dynamics and Composite Mechanics for Microstructured Materials and Metamaterials, 59, 205-220.

B. Balakrishnan, S. Raja, D. Dwarakanathan, and Amirtham Rajagopal, Vibroacoustic performance of fiber metal laminates with delamination, Mechanics of Advanced Materials and structures, 23(12), 1369-1378.

Harish Lambadi, Manojpandey, Nitin Kumar, and Amirtham Rajagopal, Homogenization of periodic masonry using self-consistent scheme and finite element method, International Journal for computational methods in engineering science and mechanics, 17(1), 7-21 (2016).

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Troyee T. Dutta, Sireesh Saride, and Maheshbabu Jallu, Effect of Saturation on Dynamic Properties of Compacted Clay in a Resonant Column Test, Geomechanincs and Geoengineering-An International Journal, Taylor & Francis, (2016) 10.1080/17486025.2016.1208849.

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the Consolidation, Swell and Shrinkage Behavior of Lime Blended Expansive Soil, International Journal of Geotechnical Engineering (2017) 10.1080/19386362.2017.1297002.

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M.C. Raghucharan and S. N. Somala, Simulation of strong ground motion for the 25 April 2015 Nepal (Gorkha) Mw 7.8 earthquake using the SCEC broadband platform, Journal of Seismology, 1-32 (2017) 10.1007/s10950-016-9635-z.

Kolluru V. L. Subramaniam, M. Ghosn and M. Ali Ahmad, Evaluation of Variation in Local Interface Fracture Properties during Shear Debonding of CFRP from Concrete, Journal of Adhesive Science and Technology, (2017) 10.1080/01694243.2016.1261505.

S. Jain, S. Suriya Prakash, and Kolluru V. L. Subramaniam, Monitoring of Concrete Cylinders with and without Steel Fibers under Compression using Piezo-ceramic Smart Aggregates, Journal of Nondestructive Evaluation, 35:59 (2017).

R. Mehar Babu, and Kolluru V. L. Subramaniam, Experimental Investigation of Compressive Failure in Masonry Brick Assemblages made with soft brick, Materials and Structures, RILEM, 50:19 (2017) 10.1617/s11527-016-0926-1.

G.V.P. Bhagath Singh and K.V.L. Subramaniam, Direct Decomposition X-ray Diffraction Method for Amorphous Phase Quantification in Binary Blends of Siliceous Fly ash and Hydrated Cement, Journal of Sustainable Cement-based Materials. 6(2), 111-125 (2017) 10.1080/21650373.2016.1177478.

M. Damaraju, D. Bhattacharyya, and K. K. Kurilla, Removal of Recalcitrant Carbon from an Industrial Wastewater Using Electrocoagulation, International Journal of Civil Engineering, Springer, (2017) 10.1007/s40999-017-0187-6.

B. Biswal and R. Singh, Incorporating channel network information in hydrologic response modelling: Development of a model and inter-model comparison, Advances in Water Resources 100, 168-182 (2017).

V. Vinay Kumar and Sireesh Saride,Evaluation of flexural fatigue behavior of two layered asphalt beams with geosynthetic-interlayers using digital image correlation, Transportation Research Record: Journal of Transportation Research Board, Washington, D.C, USA, 2631 55-64 (2017) 10.3141/2631-06.

Sireesh Saride and V. Vinay Kumar, Influence of geosynthetic interlayers on the performance of asphalt overlays on pre-cracked pavements, Geotextiles and Geomembranes, (2017)http://dx.doi.org/10.1016/j.geotexmem.2017.01.010.

Anand J. Puppala, Sireesh Saride, Raja V. Yenigalla, Bhaskar C. S. Chittoori, Ekarut Archeewa, Long term Settlement Analysis of Lightweight Embankment Fills, ASCE Performance of Constructed Facilities, (2017) http://dx.doi.org/10.1061/(ASCE)CF.1943-5509.0001043.

D. Pawar and G. R. Patil, Minor-Street Vehicles Dilemma While Maneuvering Unsignalized Intersections, Journal of Transportation Engineering, Part A: Systems. ASCE (2017) 10.1061/JTEPBS.0000066.

S. K. S. Pachalla and S. S. Prakash, Effect of Openings on the Behavior of PPHCS Slabs under Low and Moderate Shear, ACI Structural Journal, 114(2), 1-10 (2017) 10.14359/51689155.

S. K. S. Pachalla and S. S. Prakash, Load Resistance and Failure modes of FRP strengthened Precast Hollow Core Slabs with Openings, Materials and Structures Journal, Springer Ltd. 50(3), 1-14 (2017).

P. Kankeri and S. S. Prakash, Effectiveness of Hybrid Bonded Overlay and NSM CFRP Laminate Strengthening on Behavior of Prestressed Hollow Core Slabs at Different Levels of Combined Flexure and Shear, Composite Structures Journal, 170, 202-214 (2017).

S. Jain, S. S. Prakash, and K. V. L. Subramaniam, Monitoring of Concrete Cylinders with and without Steel Fibers under Compression using PZT Smart Sensors, Journal of NDT & Evaluation, Springer, 35:59 (2016)10.1007/s10921-016-0376-2.

Piska Raghu, Preethi Kasirajan, Amirtham Rajagopal, and J. N. Reddy, Nonlocal third-order shear deformation theory for analysis of laminated plates considering surface stress effects, Composite Structures, 139, 13-29 (2017).

Piska Raghu, Preethi Kasirajan, Amirtham Rajagopal, and J. N. Reddy, Nonlocal nonlinear bending and free vibration analysis of a rotating laminated nano cantilever beam, Mechanics of Advanced Materials and structures, 25(2), 1-12 (2017).

Kasi Balaji, Paul Steinmann, and Amirtham Rajagopal, Adaptive Poly - FEM for the analysis of plane elasticity problems, International Journal for Computational Methods In Engineering Science and Mechanics, 18(1), 23-45 (2017).

Publications
(in peer reviewed conferences)

A. Deepthi and Sireesh Saride, Durability Studies on Fly Ash Stabilized Reclaimed Asphalt Pavement Materials, GeoChicago 2016: Sustainability, Energy and the Geoenvironment, American Society of Civil Engineers, Special technical publication, GSP 270, 2016.

Troyee T. Dutta and Sireesh Saride, Dynamic Properties of Moderately Expansive Soil Stabilized with Class C Fly ash, GeoChicago 2016: Sustainability, Energy and the Geoenvironment, American Society of Civil Engineers, Special technical publication, GSP 271, 2016.

Piska Raghu and Amirtham Rajagopal, Polygonal FEM for plane elasticity problems, Proceedings of 61st Congress of Indian Society of Theoretical and Applied Mechanics Conference, 1-1232-42 (2016).

Raghu Piska and Rajagopal Amirtham, Nonlocal analysis of laminated plates using third order shear deformation theory considering surface stress effects, Proceedings of Sixth International Congress on Computational Mechanics and Simulation, 1260-1263 (2016).

K.S.S. Reddy, A. Rajagopal, and M. Madhavi, Effect of Damage modes and Fiber volume fraction on the Effective properties of the Unidirectional composites, Proceedings of 61st Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM), 46-56, 2016.

Singam Srividhya, Basanth Kumar, A.K. Gupta, and Amirtham Rajagopal, Meshless Natural Neighbor Galerkin Method for the Analysis of Composite Plates Using Higher order Shear Deformation Theories, Proceedings of 61st Congress of the Indian Society of Theoretical and Applied Mechanics, 123-133 (2016).

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S. Ranjan, S. R. Peddinti, and K.B.V.N. Phanindra, Comparison of compressed sensing algorithms for inversion of 3-D Electrical Resistivity Tomography, AGU Fall Meeting, USA, (2016).

Z. Lai, A. H. Varma, H. Yang, and A. Agarwal, Analysis and Design of Non-compact and Slender Rectangular CFT Columns Subjected to Ambient and Elevated Temperature, Proceedings of SSRC 2016 Annual Stability Conference, 2016.

A. Agarwal and S. Taddhanpally, Stability Behavior of Concrete-Filled Steel Tube Columns in Real Fire Conditions, Structures in Fire Conference, June 2016.

A. Agarwal and S. Taddhanpally, Stability Behavior of Concrete-Filled Steel Tube Columns in Real Fire Conditions, Structures in Fire Conference, June 2016.

T.G. Mondal and S.S. Prakash, Finite Element Analysis of Reinforced Concrete Bridge Columns under Torsional Loading, 6th International Congress on Computational Mechanics and Simulation, Mumbai, India, 26-29 June 2016.

Sireesh Saride and Deepti Avirneni, Strength Characteristics of Geopolymer Fly ash Stabilized Reclaimed Asphalt Pavement Base Courses, Indo-US workshop, GeoChicago 2016, Chicago, USA, 18 August 2016.

G. Narendra, C. Hariprasad, and B. Umashankar, Experimental study on steel-wire-mesh reinforced flexible pavements, GeoChicago: Sustainability, Energy and the Environment, ASCE, 15-18 August (2016)http://dx.doi.org/10.1061/9780784480151.029.

B. Umashankar and Prezzi, Shredded waste tires as a geomaterial, Indo-US Bilateral Workshop, Chicago, 18 August 2016.

P. Kankeri, S.S. Prakash, and G. Rai, Flexural Behavior of Prestressed Precast Hollow Core Slabs Strengthened with Bonded Overlay and NSM, 7th International Conference on Advanced Composite Materials in Bridges and Structures, Vancouver, British Columbia, Canada, 21-14 August 2016.

Sahith Gali and K.V.L. Subramaniam, Shear Behavior of Steel Fiber Reinforced Concrete using Steel Fiber Concrete using Digital Image Analysis, 9th RILEM International Symposium on Fiber Reinforced Concrete, Vancouver, Canada, 19-21 September 2016.

Chiranjeevi Reddy and K.V.L. Subramaniam, Experimental Evaluation of Flexural Response and Post-Cracking Behavior in Macro-Synthetic Fiber

Reinforced Concrete, 9th RILEM International Symposium on Fiber Reinforced Concrete, Vancouver, Canada, 19-21 September 2016.

K.V. Vinay and S. Sireesh, Evaluation of Interface Bond Strength of Geosynthetic Reinforced Pavement Layers, 6th Asian Geosynthetics conference, New Delhi, 8-11 November 2016.

Srinivasa Rao Peddinti, K.B.V.N. Phanindra, R. M. Gade, and J. Adinarayana, Root Water Uptake Patterns in Young and Matured Orange Trees - A Case Study, 21st International Conference on Hydraulics, Water Resources and Costal Engineering, HYDRO-2016, Pune, 8-10 December 2016.

R.T.P. Pranav, Sireesh Saride, and Munwar Basha, Variability Associated with Resilient Modulus of Reclaimed Asphalt Pavements, GeoChicago 2016: Sustainability, Energy and the Geoenvironment, American Society of Civil Engineers, Special technical publication, GSP 270.

K.V. Vinay and S. Sireesh, Rutting Behavior of Geocell Reinforced Base Layer over Weak Sand Subgrade Under Repetitive Loading, 3rd International Conference on Transportation Geotechnics, Procedia Engineering 143:1409-1416, December 2016, 10.1016/j.proeng.2016.06.166

D.S. Pawar and G.R. Patil, Factors affecting drivers gap acceptance behaviour at uncontrolled intersections in India, Proceedings of 14th World Conference on Transportation Research (WCTR), Tongji University, Shanghai, China 2016

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P. Kankeri, M. Chellapandian, and S.S. Prakash, Effect of Shear Keys on the Prestressed hollow core slabs, Proceedings of 3rd Symposium on Connections between Steel and Concrete, Stuttgart, Germany, 27–29 September 2017.

M.A. Rasheed, and S.S. Prakash, Behavior of Synthetic Fiber Reinforced Cellular Light Weight Concrete Under Uniaxial Tension Loading, 9th RILEM International Symposium on Fiber Reinforced Concrete, Vancouver, British Columbia, Canada, September, 2016. Paper ID No.99.

G.P. Marttin and D. Bhattacharyya, Recovery of Reducing Sugar from Food Waste: Optimization of Pretreatment Parameters Using Response Surface Methodology, Biofuels and Bioenergy (BICE2016), Springer Proceedings in Energy, (2017) ISBN 978-3-319-47257-7.

Sireesh Saride, Anu M. George, K.V. Vinay, and Anand J. Puppala, Experimental and Numerical Evaluation of Reinforcement Mechanism of Geocells, 96th Annual Meeting of the Transportation Research Board, Washington, D.C., 2017.

V. Vinay Kumar and Sireesh Saride, Evaluation of flexural fatigue behavior of two layered asphalt beams with geosynthetic asphalt beams using digital image correlations, 96th Annual Meeting of the Transportation Research Board, Washington, D.C., 2017.

Sireesh Saride and Munwar Basha, Probability Density Functions Associated with Resilient Modulus of Virgin Aggregate Bases, Pranav RTP, Geotechnical Frontiers 2017: GeoFrontiers 2017, Special technical publication, GSP 277, March 2017.

K.V. Vinaym and Sireesh Saride, Interfacial shear properties of geosynthetic interlayered asphalt overlays, Geotechnical Frontiers 2017: GeoFrontiers 2017, Special technical publication, GSP 277, March 2017.

P. Peddinti, B. Munwar Basha, and Sireesh Saride, Probability Density Functions Associated with Resilient Modulus of Virgin Aggregate Bases, ASCE Geotechnical Special Publication (GSP), 277, 314-323 (2017) (Geotechnical Frontiers, Orlando, Florida, 12-15 March 2017.

G.P. Marttin, K. Keerthi, and D. Bhattacharyya, Treatment of a Sugarcane Effluent and Simultaneous Production of Ethanol: Effect of pH and quantity of seed sludge, Proceeding of International Conference on Biotechnology & Bioengineering – Trends (ICBT-2017), Hyderabad, 23-25 March 2017 ISBN 978-93-85518-10-2.

M. Damaraju, D. Bhattacharyya, T.K. Panda, and K.K. Kurilla, Phosphorus Removal and Recovery from POME Using a Bipolar-mode Electrocoagulation System, Proceedings of International Conference on Biotechnology & Bioengineering – Trends (ICBT – 2017), Hyderabad, 23-25 March 2017 ISBN 978-93-85518-10-2.

A. Kocherla, A. Narayanan, and K.V.L. Subramaniam, Monitoring progressive changes in cementitious materials using embedded piezo-sensors, SPIE's 24th Annual International Symposium on Smart Structures and Material Systems + Nondestructive Evaluation and Health Monitoring, Portland, OR, 25-29 March 2017.

Funded Research Projects 2016-17

B Umashankar, Geogrids and Geocells Reinforced Pavements', NHAI, 2016, Rs. 135.00 Lakhs.

Surendra Nadh Somala, Investigating Earthquake Source Physics Inclusion into Engineering Analysis of Built Environment, DST-SERB, August 2016, Rs. 28.78 Lakhs.

Suriya Prakash, Fabrication and Testing of Resilient and Sustainable Fiber Reinforced Hollow Core Slabs for Affordable Housing Utchattar Avishkar Yojana Scheme, MoHUD, September 2016, Rs. 48.00 Lakhs.

Amirtham Rajagopal, Nonlocal approaches to modeling damage in composites, DST, November 2016, Rs. 32.5 Lakhs.

K.V.L. Subramaniam, Sustainable Engineered Cellular Geopolymer Masonry for Improved Building Envelope Performance, DST-IPHEE, December 2016, Rs. 65.69 Lakhs.

Shashidhar, Developing a Process and Pilot Scale Unit for the Recovery of Chrome and Other Value Added Products from Chrome Ore Process Residue (CORP), Uchchatar Avishkar Yojana, MOEF, 20 December 2016, Rs. 400.00 Lakhs.

Debraj Bhattacharyya, Developing a Novel Sequencing Batch Reactor for In-situ Containerized Wastewater Treatment, SERB (Uchchatar Avishkar Yojana), January 2017, Rs. 32.00 Lakhs.

Asif Qureshi, Estimating Mercury Levels and Exposure for Pregnant Women and New Born Babies in Selected Coastal and Interior South Indian Cities, MoEFCC, January 2017, Rs. 25.00 Lakhs.

Anil Agarwal, Light Weight High-Performance Composite Structures for Infrastructure Needs, MHRD, DST, and MeeraFibretek Pvt. Ltd, 1 January 2017, Rs. 72.00 Lakhs.

B. Munwar Basha, Vertical Expansion of Existing Municipal Solid Waste (MSW) Landfills using Retention Systems, SERC (DST), 9 February 2017, Rs. 13.36 Lakhs.

Sireesh Saride, Utilization of Fly Ash as Grout / Stabilization Material to Improve Marginal Soils with Reference to Amaravati City, APPCB, 17 March 2017, Rs. 8.8 Lakhs.

Talks Given in National / International Conferences

S. N. Somala, Numerical simulation of the three component ground velocities from the 25 April 2015 Nepal Earthquake, International Conference on Earthquake Engineering and Post Disaster Reconstruction Planning (ICEE-PDRP), Bhaktapur, Nepal, April 2016.

R. Singh and R. Kumar, Estimating water availability over India using a bottom-up probabilistic Budyko approach, Spring Meeting of the European Geosciences Union, Vienna, Austria, 17-22 April 2016.

Shashidhar and Ritu Gothwal, Mathematical Model for the Transport of Fluoroquinolone Antibiotics and its Resistant Culture in Aquatic Environment, Ecological Modeling, The International Society for Ecological Modelling Global Conference 2016, Towson University Baltimore, USA, 8-12 May 2016.

R. Singh, Water resources in a changing environment: quantifying the impact of climate and land use change on water availability, 8th Indo-German Frontiers of Engineering (INDOGFOE) Symposium, Potsdam, Germany, 19-22 May 2016.

S. N. Somala, Infrastructural response to Extreme Speed Ruptures, 1st International Natural Hazards and Infrastructure (ICONHIC2016), Crete Island, Greece, June 2016.

B. Umashankar, Design of Reinforced Retaining Walls, National Conference on Geotechnical Engineering & Modeling, Thiruvananthapuram, 17-18 June 2016.

B. Umashankar, Situ Soil Characterization based on Non-Destructive Testing, Problems, Remedies and Innovation in Soil (PRISM), JNTU Kakinada, 25 June 2016.

C. R. Amarnath, Shashidhar, and R. Srinivasan, Assessment of Ecosystem services under present and future climate scenarios for Godavari basin, 2016 SWAT conference, Beijing Normal University, China, 27-29 July 2016.

S. N. Somala, Directivity effects of multiples pulses on peak ground motion, 6th International Conference on Recent Advances in Geotechnical Earthquake Engineering (6ICRAGEE), Greater Noida, India, August 2016.

S. Sireesh and A. Deepthi, Strength Characteristics of Geopolymer Fly ash Stabilized Reclaimed Asphalt Pavement Base Courses, Indo-US Workshop, GeoChicago, Chicago, 18 August 2016.

B. Munwar Basha and A.S.S. Raghuram, Case Studies on Failure of Reinforced Soil Retaining Walls, one day workshop Conducted by Department of Civil Engineering, JNTU College of Engineering, Kakinada, Andhra Pradesh, India, 3 September 2016.

S. Sireesh, Role of Interfacial Contact Pressure Distribution on Design of Geocell Reinforced Base Layers, One Day National Conference, Young Indian Geotechnical Society, Kakinada, India, 3 September 2016.

Shashidhar and Ritu Gothwal, Occurrence of high levels of fluoroquinolones and its resistant culture in aquatic environment of river due to effluent discharges from bulk drug manufacturers, Society of Environmental Toxicological and Chemistry Asia/Pacific 2016 Conference, Singapore 16-19 September 2016.

Amirtham Rajagopal, A nonlocal phase field approach for modeling damage in quasibrittle materials, Society of Engineering Sciences, 53rd Annual Technical Meeting, University of Maryland, College park, Baltimore, USA, 2-4 October 2016.

K. B. V. N. Phanindra, Invited Speaker and Technical Session Co-Chair, First Indian National Groundwater Conference (INGWC-2016), JNTU College of Engineering, Hyderabad, 5-6 October 2016.

R. Singh, S. Veena, and A. Deshmukh, Quantifying the vulnerability of watersheds to climate change using the bottom-up modelling framework: A case study in the Krishna river basin, International Conference on Climate Change, Water, Agriculture, and Food Security (ICCCWAFS), ICRISAT Campus, Hyderabad, India, 2-3 November 2016.

A. Ramachandruni and S. N. Somala, Jumping Ruptures for Hazard Analysis, 10th Annual Structural Engineering Convention (SEC), Chennai, December 2016.

Invited Presentations

Understanding structure and functioning of crystalline aquifers in hard rock regions and groundwater management through a decision support tool, Prof. Shakeel Ahmed, Chief Scientist: CSIR-National Geophysical Research Institute, 25 April 2016.

Land use change from cotton to perennial bioenergy grasses in the Texas High Plains: Implications on Water and Nitrogen Balances, Prof. Srinivasulu Ale, Associate Professor at Texas A&M University, 14 June 2016.

World Trade Center Disaster: Role of fire issues in the collapse, Prof. Venkatesh Kodur, Michigan State University, 13 July 2016.

Workshops / Symposiums Organised

M. Basha, GeoApps 2017: Recent Developments held at IIT Hyderabad, 18 February 2017.

M. Basha, Geodisasters: Ground & Slope Instability held at JNTU Hyderabad, 1 October 2016.

Shashidhar, Workshop on One health India 2016, 17-24 July 2016.

Other Events

Anil Agarwal, GIAN course on Modeling and Design of Steel-Concrete Composite Structural Systems Instructors: Prof. Amit H. Varma, Purdue University, 16-27 May 2016.

M. Madhavan, ISPAT – 2016, Six days short course on training and workshop on Structural Steel Design sponsored by TEQIP-II, 6-11 June, 2016.

S. N. Somala, 6-day TEQIP course on Probabilistic Seismic Hazard Assessment (PSHA).

K. B. V. N. Phanindra, GIAN course on Groundwater Flow and Transport Modeling through Fractured Geologic Media, Resource Person: Prof. Walter Illman, University of Waterloo, Canada, 27 June - 8 July 2016.

Anil Agarwal, GIAN course on Structural Behavior and Design in Extreme Thermal Conditions including Fire Effects, Prof. Venkatesh Kodur, Michigan State University, 11-22 July 2016.

Amirtham Rajagopal, GIAN Course on Finite element Method, 14-24 July 2016.

Suriya Prakash, GIAN/TEQIP Workshop on Structural Upgrade and Strengthening of Civil Infrastructure using FRP Composites, 18-29 July 2016.

Asif Qureshi, GIAN course on Environmental and Human Health Risk Assessment of Chemicals, Aug-September 2016.

Suriya Prakash, GIAN Course on Advanced Prestressed Concrete for Modern Buildings and Bridges, 12-21 December 2016.

Amirtham Rajagopal, GIAN Course on Applied Continuum Mechanics, 15-25 December 2016.

M. Basha, Co-ordinated One-day workshop on GeoApps – 2017: Recent Developments in Geotechnical Engineering.

Madhavan, JICA-IITH Friendship program, 3rd work on Energy and Environment in IIT Hyderabad, 1 March 2017.

S. Sireesh Co-ordinated Prof. Ikuo Towhata, University of Tokyo visit to IITH under Friendship Program. Prof. Towhata taught one credit course at IITH on 'CE 8999: Advanced Geotechnical Earthquake Engineering, 1-2 March 2017.

M. Madhavan, ISPAT – 2017, Six days short course on training and workshop on Structural Steel Design focused on Connections and Special Topics sponsored by TEQIP-II, 20-25 March 2017.

Awards / Recognitions

K.V.L. Subramaniam, ICI-T.N. Subba Rao Endowment Lecture Award by Indian Concrete Institute, 2016.

Shashidhar, Task Force Member of Telangana State Pollution Control Board, Expert member of Greater Warangal Municipal Corporation Under Ground Drainage project.

Riddhi Singh, The Water Advanced Research and Innovation (WARI) Fellowship Program supported by the Department of Science and Technology, Govt. of India, the University of Nebraska-Lincoln (UNL), the Daugherty Water for Food Institute (DWFI) and the Indo-US Science and Technology Forum (IUSSTF).

Sireesh Sarede, Recipient of Indian Geotechnical Society – Springer Nature's Non-EBM Reviewer of the Year 2015 awarded in December 2016, Springer Nature.

COMPUTER SCIENCE & ENGINEERING

The department of CSE has been successfully running EMDS course for working professionals and also mentoring IIT Bhilai. In FY 16-17, the department received infrastructural grants from FIST and Samsung, and a Microsoft grant for organizing summer internships. Also, faculty members received grants from DRDO, SERB/DST/MHRD, DST-JST (Indo-Japan) and industry e.g., AMD, Redpine Signals, etc. CSE faculty filed patents;published papers in top-tier venues, e.g., AINTEC, ACM JETC, IEEE TBD, GLOBECOM, TKDE etc.; gave invited talks in prestigious venues, e.g., VLDB, conferences/workshops organized by CDAC, DRDO and University of Tokyo, etc. A faculty member received 2nd rank in International Pseudo-Boolean competition and a CSE research paper was covered by InsideHPC, an international technical news website. Faculty is working with city police to enhance citizen safety using video analytics. CSE students received fellowship from Intel and Google along with several awards, e.g., first prize in IDRBT Doctoral Colloquium, best paper/poster awards. Also, CSE students received prestigious competitive fellowships such as the S N Bose Fellowship, Viterbi Fellowship, Mitacs Fellowship and Purdue Goboiler fellowship, which allows them to carry out internships in universities in the US and Canada. CSE students also did internship at University of Tokyo and other Japanese universities under Sakura Science Plan. The JEE opening/closing ranks in 2016 were 418/879, up from 534/964 in 2015. CSE hosted several well-known experts for seminars, e.g., David Maltz (Microsoft), Manohar Paluri (Facebook AI Research), Rodney Meter, Shigeya Suzuki (Japan), Raymond Knopp (Eurocom), Ramesh Peri (Intel) etc. Also, faculty conducted a TLC workshop and hosted a GIAN course.

Bheemarjuna Reddy Tamma
Ph.D – IIT Madras
Associate Professor & HoD

Research Areas: Converged Networks, 5G, SDN/NFV, IoT& Network Security

Saurabh Joshi
Ph.D – IIT Kanpur
Assistant Professor

Research Areas: Formal methods of specification and verification, Program Analysis, Constraint Solving, Model checking

Sobhan Babu
Ph.D – IIT Bombay
Associate Professor

Research Areas: Big Data Analytics, Graph Theory and Algorithms

Ramakrishna Upadrasta
Ph.D – University of Paris and INRIA, Paris
Assistant Professor

Research Areas: Programming languages, Compiler Optimizations, parallelizing compilers, static analysis

C Krishna Mohan
Ph.D – IIT Madras
Associate Professor

Research Areas: Video Content Analysis, Pattern Recognition, Neural Networks

Sparsh Mittal
Ph.D – Iowa State University, USA
Assistant Professor

Research Areas: Computer architecture, Graphics processors, VLSI, high-performance computing, approximate computing, processor architectures for AI, non-volatile memory, low-power computing

M. V. Panduranga Rao
Ph.D – IISc Bangalore
Associate Professor

Research Areas: Formal Methods and Applications, Algorithms, Complexity, Quantum Computing

Maunendra Sankar Desarkar
Ph.D – IIT Kharagpur
Assistant Professor

Research Areas: Recommendation Systems, Information Retrieval, Machine Learning

Sathya Peri
Ph.D – University of Texas at Dallas
Associate Professor

Research Areas: Software Transactional Memory, Concurrent Data Structures, Peer-to-Peer Computing, Social Peer-to-Peer networks and Grid Computing Distributed System

Manish Singh
Ph.D – University of Michigan, USA
Assistant Professor

Research Areas: Data Mining, Text Mining, Social Network Analysis, Recommendation Systems

Antony Franklin A
Ph.D – IIT Madras
Assistant Professor

Research Areas: Mobile Networks, 5G, SDN/NFV, IoT, Mobile Edge Computing

Manohar Kaul
Ph.D – Aarhus University, Denmark
Assistant Professor

Research Areas: Scalable Machine Learning, Big Data Analytics and Spatial Databases

Vineeth N Balasubramanian
Ph.D – Arizona State University, USA

Assistant Professor

Research Areas: Machine Learning, Deep Learning, Computer Vision

Subrahmanyam Kalyanasundaram
Ph.D – Georgia Tech, USA

Assistant Professor

Research Areas: Algorithms, Graph Theory, Combinatorics

Srijith P K
Ph.D – IISc Bangalore

Assistant Professor

Research Areas: Bayesian Data Analysis, Probabilistic Machine Learning

Kotaro Kataoka
Ph.D – Keio University, Japan

Visiting Assistant Professor

Research Areas: Internet Architecture, Software-Defined Networking (SDN), Network Functions Virtualization (NFV), Network Operation, Post-Disaster Networking

N. R. Aravind
Ph.D – Institute of Mathematical Sciences, Chennai

Assistant Professor

Research Areas: Algorithms, Graph Theory, Combinatorics

Patents Filed

Raghu S Iyengar, Vineeth N Balasubramanian, Shuffling of Input Data for Mini-Batch Gradient Descent Based Methods, Indian Patent Application No. 201641013266 (Filed in Apr 2016).

Thomas Valerrian Pasca S, Bheemarjuna Reddy Tamma and Antony Franklin, 'Traffic Steering in Aggregated LTE-Wi-Fi Networks', Application No: 4705/CHE/2015, August 2016.

Publications
(in peer reviewed journals)

Rujia Wang, Sparsh Mittal, Youtao Zhang, and Jun Yang, Decongest: Accelerating Super-Dense PCM under Write Disturbance by Hot Page Remapping, IEEE Computer Architecture Letters (CAL), 2017, 10.1109/LCA.2017.2675883.

Sparsh Mittal, A Survey of Soft-Error Mitigation Techniques for Non-Volatile Memories, Computers, 2017, 6(8) 10.3390/computers6010008.

Sparsh Mittal, Jeffrey Vetter, Lei Jiang, "Addressing Read-disturbance Issue in STT-RAM by Data Compression and Selective Duplication", in IEEE Computer Architecture Letters, 2017, DOI: 10.1109/LCA.2016.2645207

Sparsh Mittal, A Survey of Techniques for Architecting TLBs, In Concurrency and Computation: Practice and Experience, 2017, 10.1002/cpe.4061.

Sparsh Mittal, "A Survey of Techniques for Architecting Processor Components using Domain Wall Memory", ACM Journal on Emerging Technologies in Computing

Systems, 2016, vol. 13, no. 2, article 29, DOI: 10.1145/2994550

Chen Xu, Markus Holzemer, ManoharKaul, Juan Soto, and Volker Markl, On Fault Tolerance for Distributed Iterative Dataflow Processing,Transactions on Knowledge and Data Engineering (TKDE), 2017.

Vanlin sathya, Arun Ramamurthy, S. Sandeep Kumar, and Bheemarjuna Reddy Tamma, "On Improving SINR in LTE HetNets with D2D Relays", Elsevier Computer Communications, vol. 83, pp. 27-44, June 2016.

Vanlinsathya, Arun Ramamurthy, S. Sandeep Kumar, and Bheemarjuna Reddy Tamma, On Improving SINR in LTE HetNets with D2D Relays, Elsevier Computer Communications, 83, 27-44, June 2016.

Anil Kumar Rangisetti, Thomas Valerrian Pasca S, and Bheemarjuna Reddy Tamma, QoS Aware Load Balance in Software Defined LTE Networks, Elsevier Computer Communications, 97, 52-71, January 2017.

Dinesh Singh, Debaditya Roy and C. Krishna Mohan, DiP-SVM: Distribution Preserving Kernel Support Vector Machine for Big Data, IEEE Transactions on Big Data, 3(1), 79-90, Jan-Mar 2017 10.1109/TBDATA.2016.2646700.

Dinesh Singh and C. Krishna Mohan, Graph formulation of video activities for abnormal activity recognition, Pattern Recognition (Elsevier), 65, 265-273 (2017) 10.1016/j.patcog.2017.01.001.

Earnest Paul Ijjina and C Krishna Mohan, Classification of human actions using pose-based features and stacked auto encoder, Pattern Recognition Letters(Elsevier), 83, 268-277 (2016) 10.1016/j.patrec.2016.03.021.

N. R. Aravind, R. B. Sandeep, and Naveen Sivadasan, On Polynomial Kernelization of H-free Edge Deletion, Algorithmica, 2016.

Petr Kouznetsov and Sathya Peri, Non-Interference and Local Correctness in Transactional Memory, Theoretical Computer Science, 2016.

Publications
(in peer reviewed conferences)

S. Manocha, A Ravi Sankar, and V. Balasubramanian, Dissimilarity-based Contrastive Divergence for Anomaly Detection, 2nd Indian Workshop on Machine Learning, Kanpur, 2016.

B. Akilesh, T. Marwah, V. Balasubramanian, and K. Rajamani, The Relevance of Very Deep Networks for Diabetic Retinopathy Diagnostics, IBM Collaborative Academia Research Exchange (I-CARE) Conference, Bangalore, 2016.

N. R. Aravind, Subrahmanyam Kalyanasundaram, and Anjeneya Swami Kare, Linear time algorithms for happy vertex coloring problems for trees, International Workshop on Combinatorial Algorithms, 281-292 (2016).

N. R. Aravind, R. B. Sandeep, and Naveen Sivadasan, Parameterized lower bounds and dichotomy results for the NP-completeness of H-free edge modification problems, LATIN 2016, 82-95.

Chen Xu, Markus Holzemer, ManoharKaul, and Volker Markl, Efficient Fault-tolerance for Iterative Graph Processing on Distributed Dataflow Systems, IEEE International Conference on Data Engineering (ICDE), 2016.

Larysa Visengeriyeva, Alan Akbik, and Manohar Kaul, Improving Data Quality by Leveraging Statistical Relational Learning, International Conference on Information Quality (ICIQ), 2016.

Mukesh Giluka, Sibgath Khan, Gadde Murali Krishna, Touheed Atif, Vanlin Sathya, and Bheemarjuna Reddy Tamma, Handovers in Uplink/ Downlink Decoupled LTE HetNets, Proc. of IEEE WCNC Workshop, April 2016.

Debashisha Mishra, P. C. Amogh, Arun Ramamurthy, A. Antony Franklin, and Bheemarjuna Reddy Tamma, Load-aware dynamic RRH assignment in Cloud Radio Access Networks, Proceedings of IEEE Wireless Communications and Networking Conference (WCNC), April 2016.

Aditya V. Kamath, S. Sudarshan, Kotaro Kataoka, Nishant Vijayvergiya, G. Bhargav Reddy and Samrat Phatale, SAFE: Software-defined Authentication Framework, Proceedings of ACM Asian Internet Engineering Conference 2016 (AINTEC 2016), 57-63 (2016).

Om Prakash Nirankari, Prakash Pawar and Kotaro Kataoka, Optimizing Service Chain ID Generation for Flow Rule Compression, 2016, IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN), (2016).

Kalpana Joshi and Kotaro Kataoka, SFO: SubFlow Optimizer for MPTCP in SDN, 26th IEEE International Telecommunication Networks and Applications Conference (ITNAC), (2016).

PragatiShrivastava and Kotaro Kataoka, FastSplit: Fast and Dynamic IP Mobility Management in SDN, 26th IEEE International Telecommunication Networks and Applications Conference (ITNAC), (2016).

Kotaro Kataoka, UttamDhabas, Om Prakash Nirankari and Naman Grover, Orchestrating Distributed Mode of NFV, Proceedings of 2nd IEEE Conference on Network Softwarization (NetSoft 2016), 28-32 (2016).

Anish Hirwe and Kotaro Kataoka, Light Chain: A Lightweight Optimisation of VNF Placement for Service Chaining in NFV, Proceedings of 2nd IEEE Conference on Network Softwarization (NetSoft 2016), 33-37 (2016).

Prakash Pawar and Kotaro Kataoka, Segmented Proactive Flow Rule Injection for Service Chaining Using SDN, Proceedings of 2nd IEEE Conference on Network Softwarization (NetSoft 2016), 38-42 (2016).

Rajdeep Mukherjee, Saurabh Joshi, Andreas Griesmayer, Daniel Kroening, and Tom Melham, Equivalence Checking of a Floating-Point Unit Against a High-Level C Model, 21st International Symposium on Formal Methods (FM), Lecture Notes in Computer Science, 9995, 551-558 (2016) 10.1007/978-3-319-48989-6_33.

Kunal Dahiya, Dinesh Singh and C. Krishna Mohan, Automatic Detection of Bike-riders without Helmet using Surveillance Videos in Real-time, Proc. International Joint Conference on Neural Networks(IJCNN 2016), Vancouver, Canada, 3046-3051 24-29 July 2016.

Dinesh Singh and C. Krishna Mohan, Distributed Quadratic Programming Solver for Kernel SVM using Genetic Algorithm, Proc. IEEE Congress on Evolutionary Computation (IEEE CEC 2016), Vancouver, Canada, 152-159, 24-29 July 2016.

S. Thomas Valerrian Pasca, B. Akilesh, Arjun V. Anand, and Bheemarjuna Reddy Tamma, A NS-3 Module for LTE UE Energy Consumption, Proc. of IEEE ANTS, November 2016.

B. Akilesh, VanlinSathya, Arun Ramamurthy, and Bheemarjuna Reddy Tamma, A Novel Scheduling Algorithm to Maximize the D2D Spatial Reuse in LTE Networks, Proc. of IEEE ANTS, November 2016.

M. Pavan Kumar Reddy, Srikant Manas Kala, and Bheemarjuna Reddy Tamma, Enhancing Channel Assignment Performance in Wireless Mesh Networks Through Interference Mitigation Functions, Proc. of IEEE ANTS, November 2016.

Ranadheer Musham, Srikant Manas Kala, Pavithra Muthyap, M. Pavan Kumar Reddy, and Bheemarjuna Reddy Tamma, Near Optimal Channel Assignment for Interference Mitigation in Wireless Mesh Networks, Proc. of IEEE ANTS, November 2016.

NavrozFirozCharania, Mukesh Kumar Giluka, Bheemarjuna Reddy Tamma, and A. Antony Franklin, DEARF: Delay and Energy Aware RAW Formation Scheme to Support Delay Sensitive M2M Traffic in IEEE 802.11ah Networks, Proc. of IEEE ANTS, November 2016.

Prashant Sharma, Ajay Brahmakshatriya, Bheemarjuna Reddy Tamma, and A. Antony Franklin, LWIR: LTE-WLAN Integration at RLC Layer with Virtual WLAN Scheduler for Efficient Aggregation, Proc. of IEEE GLOBECOM, December 2016.

Prashant Sharma, Ajay Brahmakshatriya, Bheemarjuna Reddy Tamma, and Antony Franklin, LWIR: LTE-WLAN Integration at RLC Layer with Virtual WLAN Scheduler for Efficient Aggregation, Proceedings of IEEE Global Communications Conference (GLOBECOM), December 2016.

Anand M. Baswade, Vanlin Sathya, Bheemarjuna

Reddy Tamma, and Antony Franklin, Unlicensed Carrier Selection and User Offloading in Dense LTE-U Networks, Proceedings of IEEE GLOBECOM Workshop on Emerging Technology for 5G Wireless Cellular Networks, December 2016.

Nazil Perveen, Dinesh Singh and C. Krishna Mohan, Spontaneous Facial Expression Recognition: A Part Based Approach, Proc. IEEE International Conference on Machine Learning and Applications(ICMLA 2016), Anaheim, California, USA, 819-824, 18-20 December 2016.

Dinesh Singh, C. Vishnu, and C. Krishna Mohan, Visual Big Data Analytics for Traffic Monitoring in Smart City, Proc. IEEE International Conference on Machine Learning and Applications(ICMLA 2016), Anaheim, California, USA, 886-891, 18-20 December 2016.

S. Thomas Valerrian Pasca, Sumanta Patro, Bheemarjuna Reddy Tamma, and A. Antony Franklin, Tightly Coupled LTE Wi-Fi Radio Access Networks: A Demo of LWIP, Proceeding of COMSNETS 2017 - Demos, January 2017.

S. Sandeep Kumar, Raymond Knopp, Navid Nikaein, Debashisha Mishra, Bheemarjuna Reddy Tamma, A. Antony Franklin, KiranKuchi, and Rohit Gupta, FLEXCRAN: Cloud Radio Access Network Prototype using Open Air Interface, Proceedings of COMSNETS 2017 - Demos, January 2017.

S. Thomas Valerrian Pasca, Siva Sairam Prasad Kodali and Kotaro Kataoka, AMPS: Application Aware Multipath Flow Routing Using Machine Learning in SDN), The National Conference on Communications (NCC), 2017.

Sparsh Mittal, Haonan Wang, Adwait Jog, Jeffrey Vetter, Design and Analysis of Soft-Error Resilience Mechanisms for GPU Register File, IEEE International Conference on VLSI Design (VLSID), Hyderabad, India, 2017, 10.1109/VLSID.2017.14.

Tapan Sahni, Chinmay Mahesh Chandak, Venkata Naveen Reddy Chedeti, and Manish Singh, Efficient Twitter Sentiment Classification using Subjective Distant Supervision, IEEE International Conference on Communication Systems and Networks (COMSNETS), 2017.

Manohar Kaul, Elementary, dear Watson!, Conference on Innovative Data Systems Research (CIDR), 2017.

Ajay Singh, Sathya Peri, G Monika and Anila kumari "Performance Comparison of Various STM Concurrency Control Protocols Using Synchrobench", in National Conference on Parallel Computing Technologies, 23-24 February 2017, Bangalore India

Malhar Thakkar, Lavish Agrawal, Anil Kumar Rangisetti, and Bheemarjuna Reddy Tamma, Reducing Ping-Pong Handovers in LTE by Using A1-Based Measurements, Proc. of NCC, March 2017.

S. Thomas Valerrian Pasca, P. C. Amogh, Debashisha Mishra, Nagamani Dheeravath, Anil kumar Rangisetti, Bheemarjuna Reddy Tamma, and A, Antony Franklin, Architectural Challenges and Solutions for Collocated LWIP - A Network Layer Perspective, Proc. of NCC, March 2017.

Thomas Valerrian Pasca S, Amogh PC, Debashisha Mishra, Nagamani Dheeravath, Anil kumar Rangisetti, Bheemarjuna Reddy Tamma, and Antony Franklin A,"Architectural Challenges and Solutions for Collocated LWIP - A Network Layer Perspective", in Proc. of NCC, Mar. 2017.

Deepa Martolia, Vanlin Sathya, Anil kumar Rangisetti, Bheemarjuna Reddy Tamma, and Antony Franklin A,"Enhancing Performance of Victim Macro Users via Joint ABSF and Dynamic Power Control in LTE HetNets", in Proc. of NCC, Mar. 2017.

Nandini Singhal, Sathya Peri, and Subrahmanyam Kalyanasundaram, Practical Multi-threaded Graph Coloring Algorithms for Shared Memory Architecture, 1st International Workshop on Algorithms for Distributed Data Analytics 2017 (held in conjunction with ICDCN).

Shiraj Arora and M. V. Panduranga Rao, Probabilistic Model Checking of Incomplete Models, Proc. Leveraging Applications of Formal Methods, Verification and Validation: Foundational Techniques - 7th International Symposium, ISoLA 2016, LNCS 9952, Springer.

Funded Research Projects 2016-17

Antony Franklin A, Low Latency Network Architecture and Protocols for 5G Systems and IOT, SERB, 5 December 2016, Rs. 33.40 Lakhs.

Vineeth N Balasubramanian, Deep Learning for Visual Recognition in Aerial Images, DRDO, January 2017, Rs. 10.00 Lakhs.

Kotaro Kataoka, Sensor Network, Redpine Signals Inc., February 2017, Rs. 3.1 Lakhs.

An Efficient Software Framework for developing Reliable Multi-threaded Applications for Multi-Core Architectures Sponsored by IMPRINT, GoI for around Rs. 30 lakhs

Talks Given in National / International Conferences

Ramakrishna Upadrasta, Loop Nest Optimizations

in LLVM: Vectorization, Polly and Prefetching..... to the future performances, Intel DevCon 2016, Co-located with 23rd annual IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2016).

Kotaro Kataoka, How to Scale SDN?, ACM Asian Internet Engineering Conference 2016 (AINTEC 2016), Bangkok, Thailand, 2016.

A. Antony Franklin, Load-aware dynamic RRH assignment in Cloud Radio Access Networks, IEEE Wireless Communications and Networking Conference (WCNC), 4 April 2016.

Introduction to Deep Learning, Honeywell Innovation Week, Hyderabad, May 2016.

Kotaro Kataoka, ICT Preparedness and Application to Natural Disaster, and Role of WIDE, Panel Discussion, WIDE Project Meeting, Kanagawa, Japan, May 2016.

Bheemarjuna Reddy Tamma, Valerrian Pasca S, Sumanta Patro, and Antony Franklin, LTE-Wi-Fi Aggregation (LWA) using OAI, 2nd OAI Workshop, Eurecom, France, 18 May 2016.

Software-Defined Networking, Expert Lecture, Faculty Development Program on Computer Networks, Electronics & ICT Academy, National Institute of Technology Warangal, Warangal, India June 2016.

Visual Intelligence and Learning, Indo-Norwegian Workshop on ICT, IIIT-Hyderabad, June 2016.

Optimization Methods and Practical Issues in Deep Learning, y Deep Learning Summer School, IIIT-Hyderabad, Jul 2016.

Kotaro Kataoka, Software-Defined Networking, Networking Workshop, 20th Anniversary Internet in Institute of Technology Bandung, Bandung, Indonesia, September 2016.

Internet development in Asia and the World (Future of Internet/REN), Panel Discussion, AI3 & SOI Asia Meeting, Institute of Technology Bandung, Bandung, Indonesia, September 2016.

Service Chaining in SDN, AI3 & SOI Asia Meeting, Institute of Technology Bandung, Bandung, Indonesia, September 2016.

Deep Learning for Big Data, Continuing Education Programme at ANURAG, DRDO, Hyderabad, September 2016.

Tutorial on Deep Learning, 22nd International Conference on Advanced Computing and Communications (ADCOM 2016), Bangalore, September 2016.

Manohar Kaul, New Lower and Upper Distance Bounds for Shortest Distance Queries on Terrains, Proceedings of Very Large Databases (PVLDB), New Delhi, India, September 2016.

Towards Deep Socio-Behavioral Intelligence, Intel India Research Colloquium, Bangalore, October 2016.

Social Interaction Assistant for Individuals with Visual Impairments, Workshop on Computer Vision for Persons with Disabilities, IIIT-Delhi, October 2016.

Smita Roy, Samrat Mondal, Asif Ekbal and Maunendra Sankar Desarkar, CRDT: Correlation Ratio Based Decision Tree Model for Healthcare Data Mining, 16th IEEE International Conference on BioInformatics and BioEngineering (BIBE) 2016, 36-43, Taichung, Taiwan, 31 October – 2 November 2016.

Bheemarjuna Reddy Tamma and Rohit Gupta, Open Air Interface (OAI) for Experimentation in 5G, IEEE ANTS 2016 Tutorials, IISc Bangalore, India, 6 November 2016.

M. Pavan Kumar Reddy, Srikant Manas Kala, and Bheemarjuna Reddy Tamma, Enhancing Channel Assignment Performance in Wireless Mesh Networks Through Interference Mitigation Functions, IEEE ANTS, IISc Bangalore, India, 8 November 2016.

Ranadheer Musham, Srikant Manas Kala, Pavithra Muthyap, M. Pavan Kumar Reddy, and Bheemarjuna Reddy Tamma, Near Optimal Channel Assignment for Interference Mitigation in Wireless Mesh Networks, IEEE ANTS, IISc Bangalore, India, 9 November 2016.

Vineeth N Balasubramanian, Sync-DRAW: Video Generation using Deep Recurrent Architectures, Mysore Park Workshop on Vision, Language and AI, December 2016.

A. Antony Franklin, LWIR: LTE-WLAN Integration at RLC Layer with Virtual WLAN Scheduler for Efficient Aggregation, IEEE Global Communications Conference (GLOBECOM), Washington DC, USA, 7 December 2016.

Sparsh Mittal, Memory Architecture for Exa-scale Computing: Challenges and Solution Directions, 3rd National conference on Parallel Computing Technologies, Bengaluru, India (PARCOMPTECH-2017).

Vineeth N Balasubramanian, Tutorial on Deep Learning, National Convention of Computer Society of India, Coimbatore, January 2017.

Vineeth N Balasubramanian, Video Generation using Deep Recurrent Architectures, University of Tokyo, January 2017.

M.V. Panduranga Rao, Quantum Mechanics for Quantum Computing, 7th IEEE International Advance Computing Conference, Hyderabad, 5 January 2017.

M.V. Panduranga Rao, Advances and Limitations Of Quantum Computing, 7th IEEE International Advance Computing Conference, Hyderabad, 5 January 2017.

Deepa Martolia, Vanlin Sathya, Anil Kumar Rangisetti, Bheemarjuna Reddy Tamma, and A. Antony Franklin, Enhancing Performance of Victim Macro Users via Joint ABSF and Dynamic Power Control in LTE HetNets, National Conference on Communications (NCC), IIT Madras, India, 3 March 2017.

Invited Presentations

Distributed Computation of Sparse Cuts, Dr. Anisur Rahaman, 11 April 2016.

High Performance Parallel Programming on Modern Processors, Dr. Vivek Kumar, 13 April 2016.

Machine Learning through Bayesian Inference, Dr. Hari Koduvely, 4 May 2016.

Planning Under Uncertainty, Dr. Chandrashekar, 4 May 2016.

TCP Download Performance in Dense WiFi Scenarios: Analysis and Solution, Ms. Mukulika Maity, 11 May 2016.

Verifying Security Properties in Modern SoCs Using Instruction-Level Abstractions, Mr. Pramod Subramanyan, 7 September 2016.

Connecting the Cloud: Azure's Software Defined Network, Dr. David A. Maltzon, 14 September 2016.

Supervised Class Ratio Estimation, Dr. Saketha Nath, 26 September 2016.

Problems and Results on Uniform Hypergraphs, Dr. Saswata Shannigrahi, 1 November 2016.

RDMA at Scale, Albert Greenberg, CVP for Microsoft Azure Networking, 17 November 2016.

Cognitive Modeling of Information Search, Dr. Saraschandra Karanam, 25 November 2016.

Intel® Software tools: Faster Code ... Faster, Dr. Ramesh Peri, Intel, 6 December 2016.

Performance Prediction of Parallel Applications Based on Small-Scale Executions, Dr. Rajendra Boppana, 8 December 2016.

Security and Privacy in the Internet Age, Dr. Aniket Kate, Purdue University, 4 January 2017.

A Self-Stabilizing Minimal K-Grouping Algorithm, Prof. Ajoy K Datta, University of Nevada Las Vegas, 3 January 2017.

Hierarchical key agreement schemes for wireless ad-hoc networks: special focus on lightweight protocols, Dr. Pinaki Sarkar, NISER, Bhubaneshwar, 5 January 2017.

Computer Vision @ Facebook, Mr. ManoharPaluri, Facebook AI Research, Menlo Park, USA, 9 January 2017.

Community Analysis in Complex Networks, Dr. Tanmoy Chakraborty, University of Maryland, 13 January 2017.

Applications of Regular quantifiers in Logics, Dr. A. V. Sreejith, 30 January 2017.

A Changing Landscape: Securing The Internet Of Things (IoT), Prof. Sanjay K. Jha, University of New South Wales, Australia, 6 February 2017.

The emergence of open-source 4G/5G ecosystems, Prof. Raymond Knopp, Eurecom, 28 February 2017.

Providing Accountability in Heterogeneous Systems-on-Chip, Mr. Rajshekar, a senior research fellow at IIT Delhi, 21 March 2017.

A special lecture on Blockchain, Prof. Shigeya Suzuki, Keio University, Japan, 21 March 2017.

A Special Lecture on Quantum Networking, Prof. Rodney Van Meter, Keio University, Japan, 22 March 2017.

Workshops / Symposiums Organised

Vineeth N. Balasubramanian, Co-organizer, Workshop on Assistive Vision, Asian Conference on Computer Vision (ACCV), 2016.

Vineeth N. Balasubramanian, Technical Co-chair, IBM Collaborative Academia Research Exchange (I-CARE) Conference, 2016.

Other Events

Sparsh Mittal, Advanced Memory System Architecture: A TLC workshop.

Maunendra Sankar Desarkar, organized GIAN course on Enabling Large Scale Data Analytics: From Theoretical Foundations to Practice, Guest Faculty: Dr. Barna Saha from University of Massachusetts Amherst, 13-17 June 2016.

Awards / Recognitions

Saurabh Joshi, Open-WBO, a Pseudo-Boolean solver using GTE technique developed by the faculty member, won second and third prize in Pseudo-Boolean Competition 2016.

Santanu Das, Dangeti Tharun Kumar Utpal Bora, Ramakrishna Upadrasta, A Comparative Study of Vectorization in Compilers has been selected as the best Student Poster in 23rd annual IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2016), 1st prize.

Abhishek Patwardhan, Ramakrishna Upadrasta Texturizing PPCG: Supporting texture memory in a Polyhedral compiler has been selected as the best Student Poster in 23rd annual IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2016), 4th prize.

Kotaro Kataoka, (Best Student Paper Award) SFO: SubFlow Optimizer for MPTCP in SDN, Kalpana Joshi and Kotaro Kataoka, 26th IEEE International Telecommunication Networks and Applications Conference (ITNAC), 2016.

Sparsh Mittal, Research paper was covered by InsideHPC.com, a technical news website. The title of the news item was New Paper Surveys Cache Partitioning Techniques.

Arghya Pal, Intel India PhD Fellowship, (competitive program awarded based on proposals submitted by faculty jointly with students), 2016-20.

DESIGN

The youngest department at IIT Hyderabad has taken many initiatives during FY 2016-17 to foster the spirit of creative design and innovation through its masters and research programs. In continuation of the same, the department has formulated Minor program in Design for Bachelor students of the institute which will be offered from Academic year 2017-18.

The department initiated several projects under the Design Innovation Center (DIC) which is funded by Ministry of Human Resource and Development. As part of this, student-faculty teams have engaged in digital preservation of heritage, digital documentation, photography. Some explorations in the area of Virtual Reality and Augmented Reality have begun for the same. Also animation is being used as a medium to re-tell stories and legends associated with the tombs of the Qutub Shahi.

The departmental approach has been to encourage and engage with its immediate community of users. Both faculty and student teams have been actively involved in providing design support to the institute community through various design initiatives like: convocation gown and materials, furniture, interior design, architectural design, websites, institute newsletter, promo materials for various events, logos for on campus centres, etc..

Deepak John Mathew
Ph.D – MS University of Baroda
Professor & HoD

Research Areas: Photography, Elements of design, Aesthetics, History of Design

Prasad S. Onkar
Ph.D – IISc Bangalore
Assistant Professor

Research Areas: Product Design, Computer Aided Conceptual Design, 3D Sketching, Virtual reality, Haptics, Interaction design

Neelakantan P K
Ph.D ongoing at IIT Bombay
Assistant Professor

Research Areas: Architectural Design

Delwyn Jude Remedios
Assistant Professor

Research Areas: Animation, Graphic Novels, Illustrations, e Learning

Publications
(in peer reviewed journals)

Prasad S. Onkar and Dibakar Sen, Direct 3D Sketching with Haptic and Motion Constraints, International Journal of Computer Aided Engineering and Technology, 8(1/2), 33-55 (2016)

Publications
(in peer reviewed conferences)

Mamatha N. Rao, Prasad S Onkar, and Deepak John Mathew, Evolution of Design Briefs: Expressions from Professional Design Practice, International Conference on Research in to Design, Guwahati, 2017.

Doji Samson and Deepak John Mathew, Harnessing Human Creativity through Design Innovation as a Formal Basis towards arriving at the Space and Scope of Practice, International Conference on Creativity and Cognition in Art and Design (ICCCAD), 2017.

Sumanna Som and Deepak John Mathew, Creative pedagogy and exploration of self-identity through Art education, International Conference on Creativity and Cognition in Art and Design (ICCCAD), 2017.

K. V. Rakhin and Deepak John Mathew, Exploring Design Ideas towards Eliminating Municipal Solid Waste in Public Places: A perspective of a Designer's life experiences – A Study, International Conference on Creativity and Cognition in Art and Design (ICCCAD), 2017.

Vimal Krishnan and Prasad Onkar, Space and Narrative Embodiment: a New Media Installation of a Keralan Folk Tale, International Conference on Creativity and Cognition in Art and Design, Bangaluru, 2016.

Talks Given in National / International Conferences

Delwyn Jude Remedios, Basic Animation Course, The National Institute of Design, Ahmedabad, 2016.

Deepak John Mathew, National Master Artists Camp, State University of Performing and Visual Arts, Rohtak, Haryana, 2017.

Deepak John Mathew, Photography for every day life, Craft Village, Gurgav, New Delhi, 2017.

Deepak John Mathew, Talk and workshop on Fashion and still life Photography, Gallery Sutra, Kochi, Kerala, 2017.

Invited Presentations

Comics by Javed Imithiaz, Comic artist, October 5, 2016

Contemporary Photography by Sneha Trivedi, Independent Photographer, October 26, 2016.

Understanding UX Design by Ruchi Saxena, Senior UX Designer CA Technologies, November 9, 2016.

Demystifying Design Industry by Namita Maheshwari, User Experience Design Specialist, BI Analytics, SAP Labs Bangalore,November 23, 2016.

The art and heart of Storytelling - Oral tradition and the role of storytelling in learning by Deepa Kiran, Professional Storyteller, January 25, 2017.

User Experience by Ranjeet Tayi, product user experience designer, informatica.

Facets of Juggling by Satwinder Setia, Professional Juggler, February 22, 2017.

Workshops / Symposiums Organised

Clay Workshop by Heena Kokel, Architect, Cofounder, Director of Clay Club Innovations Pvt. Ltd, January 11, 2017.

Cultural Identity in Design by Anka Falk, Faculty, University of Applied Sciences and Arts Northwestern Switzerland, HyperWerk Institute, February 13-17, 2017.

Awards / Recognitions

Prasad Onkar, MAA Communications Medal for best PhD thesis, Indian Institute of Science, Bangalore for the academic year 2015-16, Awarded on June 25, 2016.

ELECTRICAL ENGINEERING

Electrical Engineering is one of the earliest department of IIT Hyderabad. Our research expertise lies in the field microelectronic and VLSI, communication and signal processing, power electronics and power systems, systems and control. We are actively involved in important collaborative research activities with Indian Space Research Organization (ISRO), Defence Research and Development Organization (DRDO), Council of Scientific and Industrial Research (CSIR) labs. The faculty members team are highly dedicated and ambitious in providing excellent teaching and pursuing high-end research.

Our department offers Bachelor of Technology (B.Tech), Master of Technology (M.Tech) and Doctor of Philosophy (PhD) programs.

Mohammed Zafar Ali Khan
Ph.D – IISc Bangalore
Professor & HoD

Research Areas: Cognitive Radio, cyber physical systems, MIMO and signal processing for communications

Siva Kumar K
Ph.D – IISc Bangalore
Associate Professor

Research Areas: Multilevel Inverters, Pole-Phase modulated IM, Micro grdis

UB Desai
Ph.D - Johns Hopkins, USA
Professor

Research Areas: Wireless Communication and Signal Processing

Ketan P Detroja
Ph.D – IIT Bombay
Associate Professor

Research Areas: Control Theory, Distributed Estimation, Fault Diagnosis

P. Rajalakshmi
Ph.D – IIT Madras
Associate Professor

Research Areas: Wireless Communications, Networking, IoT, CPS

Sri Rama Murty Kodukula
Ph.D – IIT Madras
Associate Professor

Research Areas: Speech Signal Processing, Machine Learning

Vaskar Sarkar
Ph.D – IIT Bombay
Associate Professor

Research Areas: Restructured Power Systems, Wide Area Monitoring and Control, Renewables and Microgrid, Demand Side Management

Shiv Govind Singh
Ph.D – IIT Bombay
Associate Professor

Research Areas: 3D IC, Sensors (Gas, Bio, Heavy Metals), MEMS, Lab on Chip, Nanodevices

G. V. V. Sharma
Ph.D – IIT Bombay
Assistant Professor

Research Areas: Visible Light Communication, Wireless Communication, Automation

Sumohana S. Channappayya
Ph.D – The University of Texas at Austin, USA
Associate Professor

Research Areas: Multimedia Quality Assessment, Biomedical Image Processing

Siva Rama Krishna Vanjari
Ph.D – IISc, Bangalore
Assistant Professor

Research Areas: Nanobiosensors, VLSI technology, 3D IC, CMOS Sensors

Kiran Kuchi
Ph.D – University of Texas at Arlington, USA
Associate Professor

Research Areas: Wireless Communications, Signal Processing

Ravikumar Bhimasingu
Ph.D – IISc Bangalore

Assistant Professor

Research Areas: Power System Protection, Security improvements, renewable integration to grid and Micro grids

Lakshmi Prasad Natarajan
Ph.D – .IISc Bangalore

Assistant Professor

Research Areas: Modulation, coding techniques and theory

Sushmee Badhulika
Ph.D – University of California, USA

Assistant Professor

Research Areas: Nanomaterials, devices and circuits, Flexible and wearable electronics, Paper electronics, Electrochemical sensors

Kaushik Nayak
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Nanoelectronic Device Physics, Carrier Transport, Physical and Wave Electronics

Abhinav Kumar
Ph.D – IIT Delhi

Assistant Professor

Research Areas: Wireless communications and networking, green cellular networks, user network selection, device to device communications, and radio resource management in heterogeneous wireless access networks

Amit Acharyya
Ph.D – University of Southampton, UK

Assistant Professor

Research Areas: Signal Processing Algorithm and VLSI Architectures, VLSI systems for next generation healthcare systems, Low Power Design Techniques

Swati Gupta
Ph.D – University of Strathclyde, UK

Assistant Professor

Research Areas: Organic Electronics, Flexible Electronics, Organic solar cells.

Yemula Pradeep Kumar
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Smart Grids, Demand Response, Interoperability, IT Architectures for Power Systems, Renewable Energy

DISTINGUISHED VISITING FACULTY

Mathukumalli Vidyasagar
The University of Texas at Dallas

Teaching Subjects: EE5420 - Introduction to Compressed Sensing, EE5430 - Compressed Sensing, EE5410 - Nonlinear Control Theory

Books & Book Chapters

PPR Reddy, K Sri Rama Murty and B Yegnanarayana, "Representation Learning for Spoken Term Detection," Amita Pal and Sankar K Pal ed. Pattern Recognition and Big Data, World Scientific Publishing, 2016

R. Sha, S. Badhulika, A. Mulchandani. "Graphene based biosensors and their applications in biomedical and environmental monitoring" in book Label-Free Biosensing: Solid State Micro- and Nano Biosensors, Advanced Materials, Devices and Applications, Springer, 2017

P. Sahatiya, S. Badhulika, "Graphene hybrid architectures for chemical sensors" in book The new paradigm of graphene-based materials in medicine and environment, Springer-Verlag, Germany, 2016, DOI: 10.1007/978-3-319-45639-3

Patents Filed

Asisa Kumar Panigrahi, Satish Bonam, Siva Rama Krishna Vanjari, and Shiv Govind Singh, Optimized ultra-thin alloys leads sub 140 degree Celsius and Low Pressure 2.5 bar Cu-Cu bonding for 3D ICs, Indian Patent Application No 201641035405, Filed on 17 October 2016.

Nirupam, Ranha Reddy, handa Karthik, Radharaman Mohanti, Siva Rama Krishana Vanjari, Shiv govind Singh, Bulk micromachined SI Microbolometer and the method of fabrication thereof, Indian patent, 2016, File no 201641040755.

P. Rajalakshmi, M. P. R. Sai Kiran, Jagadish B, On-chip System Architecture for Low Complex DWT based Eye Blink Identification for Controlling IoT Environments, 27 March, 2017, Appl. No.201741010868, TEMP/E1/10971/2017CHE

Publications
(in peer reviewed journals)

K. Optimal autonomous microgrid operation: A holistic view, K. P. Detroja, Applied Energy, 173, 2016, 320

Electrical Machines Based DC/AC Energy Conversion Schemes for the Improvement of Power Quality and Resiliency in Renewable Energy Microgrids, Y. V. Pavan Kumar, Ravikumar Bhimasingu, Elsevier International Journal of Electrical Power & Energy Systems (IJEPES), 90, 10 (2016)

A Simple Modular Multilevel Inverter Topology for the Power Quality Improvement in Renewable Energy Based Green Building Microgrids, Y. V. Pavan Kumar, Bhimasingu Ravikumar, Elsevier Electric Power Systems Research (EPSR) Journal, 140, 147 (2016)

Integrating Renewable Energy Sources to an Urban Building in India: Challenges, Opportunities, and Techno-Economic Feasibility Simulation, Y. V. Pavan Kumar, Bhimasingu Ravikumar, Springer Journal of Technology and Economics of Smart Grids and Sustainable Energy (TESG), 1, 1 (2016)

Refined Hybrid Microgrid Architecture for the Improvement of Voltage Profile, Pinjala Mohana Kishore, Ravikumar Bhimasingu, Elsevier Journal of Energy Procedia, 90, 645 (2016)

New error correcting codes for informed receivers, L. Natarajan, Y. Hong and E. Viterbo, IEEE International Symposium on Information Theory (ISIT), Barcelona, 2839 (2016)

Epoch Extraction by Phase Modelling of Speech Signals, Karthika Vijayan and K. Sri Rama Murty, Circuits, Systems, and Signal Processing, 35(7), 2584 (2016)

Significance of analytic phase of speech signals in speaker verification, Karthika Vijayan, P. R. Reddy and K. Sri Rama Murty, Speech Communication, 18, (2016)

Power allocation for uniform illumination with stochastic LED arrays, G. V. S. S. Praneeth Varma, Rayapati Sushma, Vandana Sharma, Abhinav Kumar, and G. V. V. Sharma, Opt. Express 25(8), 8659 (2017)

A comprehensive approach for milk adulteration detection using inherent bio-physical properties as 'Universal Markers': Towards a miniaturized adulteration detection platform, Tripathy, Suryasnata, Aniket Ramesh Ghole, Khandavalli Deep, Siva Rama Krishna Vanjari, and Shiv Govind Singh, Food Chemistry 217, 756 (2017)

Electrospun Manganese (III) Oxide Nanofiber based Electrochemical DNA-Nanobiosensor for Zeptomolar Detection of Dengue Consensus Primer, Tripathy, Suryasnata, Siva Rama Krishna Vanjari, Vikrant Singh, S. Swaminathan, and Shiv Govind Singh, Biosensors and Bioelectronics, 90, 378 (2017)

One step biofunctionalized electrospun multiwalled carbon nanotubes embedded zinc oxide nanowire interface for highly sensitive detection of carcinoma antigen-125, K. Brince Paul, Vikrant Singh, Siva Rama Krishna Vanjari, and Shiv Govind Singh, Biosensors and Bioelectronics 88, 144 (2017)

An ultrasensitive label free nanobiosensor platform for the detection of cardiac biomarkers,

Matta, Durga Prakash, Suryasnata Tripathy, Siva Rama Krishna Vanjari, Chandra Shekhar Sharma, and Shiv Govind Singh, Biomedical Microdevices 18(6), 111 (2016)

Ultrasensitive, Label Free, Chemiresistive Nanobiosensor Using Multiwalled Carbon Nanotubes Embedded Electrospun SU-8 Nanofibers, Durga Prakash, Matta, Siva Rama Krishna Vanjari, Chandra Shekhar Sharma, and Shiv Govind Singh, Sensors 16(9), 1354, (2016)

A highly sensitive self assembled monolayer modified copper doped zinc oxide nanofiber interface for detection of Plasmodium falciparum histidine-rich protein-2: Targeted towards rapid, early diagnosis of malaria, K. Brince Paul, Sanni Kumar, Suryasnata Tripathy, Siva Rama Krishna Vanjari, Vikrant Singh, and Shiv Govind Singh, Biosensors and Bioelectronics 80, 39 (2016)

Electrochemical Detection of Cardiac Biomarkers Utilizing Electrospun Multiwalled Carbon Nanotubes Embedded SU-8 Nanofibers, Prakash, M. Durga, S. G. Singh, C. S. Sharma, and Siva Rama Krishna Vanjari, Electroanalysis, 29(2), 380 (2017)

Ultra-thin Ti passivation mediated breakthrough in high quality Cu-Cu bonding at low temperature and pressure, Panigrahi, Asisa Kumar, Satish Bonam, Tamal Ghosh, Shiv Govind Singh, and Siva Rama Krishna Vanjari**,** Materials Letters 169, 269 (2016)

Oxidation Resistive, CMOS Compatible Copper-Based Alloy Ultrathin Films as a Superior Passivation Mechanism for Achieving 150° C Cu-Cu Wafer on Wafer Thermocompression Bonding, Panigrahi, Asisa Kumar, Tamal Ghosh, Siva Rama Krishna Vanjari**,** and Shiv Govind Singh, IEEE Transactions on Electron Devices 64(3), 1239 (2017)

Wearable Woven Electrochemical Biosensor Patch for Non-invasive Diagnostics, Modali, Anil, Siva Rama Krishna Vanjari, and Dhananjaya Dendukuri, Electroanalysis, 28(6), 1276 (2016)

Effect of metal gate granularity induced random fluctuations on Si gate-all-around nanowire MOSFET 6-T SRAM cell stability, M. Bajaj, K. Nayak, S. Gundapaneni, and V. Ramgopal Rao, IEEE Trans. Nanotechnology, 15 (2), 243 (2016)

Ultra-smooth e-beam evaporated amorphous silicon thin films – A viable alternative for PECVD amorphous silicon thin films for MEMS applications, Jose Joseph, Shiv Govind Singh, Siva Rama Krishna Vanjari, Materials Letters , 197, 52 (2017)

Demonstration of Sub 150 °C Cu-Cu thermocompression bonding for 3D IC applications, utilizing an ultra-thin layer of Manganin alloy as an effective surface passivation layer, Asisa Kumar Panigrahi, Tamal Ghosh, Siva Rama Krishna Vanjari, and Shiv Govind Singh, Materials Letters, 194, 86 (2017)

Effect of cross aspect ratio on characteristic length scale and onset of flow separation in diverging and converging microchannel, V. Duryodhan, S.G. Singh, A. Agrawal, Journal of Fluids Engineering, 139(6), 061203 (2017)

Heat distribution in converging and diverging microchannel in presence of conjugate effect, V. Duryodhan, S.G. Singh, A. Agrawal, International Journal of Heat and Mass Transfer, 104, 1022 (2017)

Highly sensitive electrospun multiwalled carbon nanotubes embedded zinc oxide nanowire based interface for label free biosensing, K. Brince Paul, S. G. Singh, Procedia Technology, 2017.

Highly-sensitive label-free differential pulse voltammetric immunosensor for diagnosis of infectious diseases based on electrospun copper doped ZnO nanofiber biosensing platform, K. Brince Paul, S. G. Singh, Procedia Technology, 2017.

A simple and novel way of maintaining constant temperature in microdevices, V. Duryodhan, A. Singh, S. G. Singh, and A. Agrawal, Scientific Reports, 6, 18230 (2016)

A highly sensitive self-assembled monolayer modified copper doped zinc oxide nanofiber interface for detection of Plasmodium falciparum histidine-rich protein-2: Targeted towards rapid, early diagnosis of malaria, K. Brince Paul, Sanni Kumar, Suryasnata Tripathy, Siva Rama Krishna Vanjari, Vikrant Singh, and Shiv Govind Singh, Biosensors and Bioelectronics 80, 39 (2016)

Three-Dimensional Numerical Study of Conjugate Heat Transfer in Diverging Microchannel, V. S. Duryodhan, A. Singh, S. G. Singh, A. Agrawal, Proceedings of Indian National Science Academy, 82(2), 2016, 321.

A Cost-Effective Fault Tolerance Technique for Functional TSV in 3D-ICs, P. Ravi Teja Reddy, A. Acharyya, and Saqib Khursheed, IEEE Transactions on Very Large Scale Integration Systems (TVLSI), 1, (2017)

Coordinate Rotation Based Low Complexity K-Means Clustering Architecture, Bhagyaraja Adapa, Dwaipayan Biswas, Swati Bharadwaj, R. Shashank, A. Acharyya, and Koushik Maharatna, IEEE Transactions on Very Large Scale Integration Systems (TVLSI), 25, 1568 (2017)

Low Power Personalized ECG Based System Design Methodology for Remote Cardiac Health Monitoring, V. Naresh, Pravanjan Patra, Pankaj

Kumar Jha, C. Krishna Bharadwaj, V. Charan Kumar, Agathya Jagirdar, V. Y. Gudur, A. Acharyya, and Ashudeb Dutta, IEEE Access Journal, 4, 8407 (2016)

Self-healing phenomena of graphene: potential and applications, K. Vijaya Sekhar, Sanghamitra Debroy, V. Pavan Kumar Miriyala, Swati Ghosh Acharyya, A. Acharyya, Open Physics (formerly Central European Journal of Physics), De Gruyter, 14, 4025 (2016)

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Graphene-Polyaniline composite based ultra-sensitive electrochemical sensor for non-enzymatic detection of urea, R. Sha, K. Komori, S. Badhulika, Electrochimica Acta, 233, 44 (2017)

Eraser-based eco-friendly fabrication of a skin-like large-area matrix of flexible carbon nanotube strain and pressure sensors, P. Sahatiya, S. Badhulika, Nanotechnology, 28, 9 (2017)

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Solvent-free fabrication of paper based all-carbon disposable multifunctional sensors and passive electronic circuits, S. Kanaparthi, S. Badhulika, RSC Advances, 2016; 10.1039/C6RA21457F

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Low cost, flexible and biodegradable touch sensor fabricated by solvent-free processing of graphite on cellulose paper, S. Kanaparthi, S. Badhulika, Sensors & Actuators B: Chemical, 242, 857 (2016)

Flexible, eco-friendly and highly sensitive paper antenna based electromechanical sensor for wireless human motion detection and structural health monitoring, S. Kanaparthi, S. Badhulika, Extreme Mechanics Letters, 9, 324 (2016)

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An Efficient Direct Solution of Cave-Filling Problems, K. Naidu, Mohammed Zafar Ali Khan, L. Hanzo, IEEE Transactions on Communications, 99, 1 (2016)

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Coverage Analysis of Cloud Radio Networks With Finite Clustering, Sreejith T. Veetil, Kiran Kuchi, and Radha Krishna Ganti, IEEE Transactions on Wireless Communications, 16, 594 (2017)

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Multilevel Inverter Scheme for Performance Improvement of Pole-Phase-Modulated Multiphase Induction Motor Drive, B. S. Umesh and K.

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Computer Aided Abnormality Detection for Kidney on FPGA based IoT Enabled Portable Ultrasound Imaging System, K. Divya Krishna, Vivek Akkala, R. Bharath, P. Rajalakshmi, Mohammed Abdul Mateen, S. N. Merchant, and U. B. Desai, Elsevier IRBM - Innovation and Research in BioMedical Engineering, 37, 189 (2016)

Generalised analytical framework for the stability studies of an AC microgrid, K. Manjunath and V. Sarkar, The Journal of Engineering, 9, May 2016

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Enhanced Real-Time Power Balancing of an AC Microgrid through Transiently Coupled Droop Control, K. Manjunath and V. Sarkar, IET Generation, Transmission & Distribution, 10.1049/iet-gtd.2016.1250

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Performance Analysis of Static Versus Rotary DC/AC Power Converters for Hybrid Renewable Energy Based Microgrid Applications, Y. V. Pavan Kumar, Ravikumar Bhimasingu, IEEE Region 10 Conference (TENCON), Singapore, 1456 (2016)

Improving Power Quality in Microgrids Using Virtual Motor-Generator Set Based Control Scheme, Y. V. Pavan Kumar, Ravikumar Bhimasingu, The 42nd Annual Conference of IEEE Industrial Electronics Society (IECON 2016), Florence, Italy, 7173 (2016)

Enabling Self-healing Microgrids by the Improvement of Resiliency Using Closed Loop Virtual DC Motor and Induction Generator Control Scheme, Y. V. Pavan Kumar, Ravikumar Bhimasingu, IEEE Power and Energy Society General Meeting (PESGM), Boston, Massachusetts, U.S.A, (2016)

Enabling the Fault Tolerant Operation of Shipboard Microgrid Architecture, Pinjala Mohana Kishore, Ravikumar Bhimasingu, IEEE International Conference on Sustainable Green Buildings and Communities (SGBC), IIT Madras, India, (2016)

A Non-isolated Single Stage Three-port Converter for Hybrid Microgrid Applications, Pinjala Mohana Kishore, Ravikumar Bhimasingu, IEEE International Conference on Sustainable Green Buildings and Communities (SGBC), IIT Madras, India, (2016)

A Simplified Converter with Simultaneous Multi-level AC and Boost DC Outputs for Hybrid Microgrid Applications, Pinjala Mohana Kishore, Ravikumar Bhimasingu, IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum, India, (2016)

A High Step-up Multilevel DC-AC/DC Three-port Converter Using Single DC Source for Hybrid Microgrid Applications, Pinjala Mohana Kishore, Ravikumar Bhimasingu, IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum, India, (2016)

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Thermo-Magnetic Shape Control of Nano-Ferromagnetic particle doped Shape Memory Alloy for Orthpedic devices and Rehabilitation Techniques, Arvind Gautam, Mounika Kare, Divya Andem, Pallavi Karhade, A. Bhargavi Rani, A. Acharyya and Swati Ghosh Acharyya, Sixth IEEE International Symposium on Embedded computing and system Design (ISED), Indian Institute of Technology (IIT) Patna, India, 15-17 December 2016

Low Complexity Single Channel ICA Architecture Design Methodology for Pervasive Healthcare Applications, Swati Bhardwaj, Bhagyaraja Adapa, R. Shashank, Pranit Jadhav, Dwaipayan Biswas, A. Acharyya and Ganesh R. Naik, IEEE International Workshop on Signal Processing Systems, Dallas, Texas, USA, 26-28 October 2016

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FPGA-based Adaptive Learning System Design and Implementation using CMAC: An MSc Project Experience, Daniel V. Martinez, Rishad A. Shafik, A. Acharyya and Geoff Merrett, 11th IEEE European Workshop on Microelectronics Education (EWME 2016), Southampton, UK, 11-13 May 2016

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Modeling the Effect of Quantization and Packet Loss on State Estimation In Cyber-Physical Systems, Venkat Reddy and Mohammed Zafar Ali Khan, IEEE COMSNETS 2017, 4-8 January 2017

Throughput Analysis of Cloud Cognitive Radio, Viswajeet Singh and Mohammed Zafar Ali Khan, IEEE Networks 2016, 26-28 September 2016

Smart grid Traffic Analysis in GSM and LTE Networks using Multidimensional Markovian Process, D. Sandeep and Mohammed Zafar Ali Khan, IEEE Networks 2016, 26-28 September 2016

A Fast Algorithm for Solving Cave-filling Problems, K. Naidu and Mohammed Zafar Ali Khan, IEEE VTC Fall 2016, Montreal, 18-21 September

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A New Variant Of Radix-4 FFT, Shaik Qadeer and Mohammed Zafar Ali Khan, Proceedings of IEEE WOCN 2016, Hyderabad, 21-23 July

On Cooperative Spectrum Sensing with Improved Energy Detector over Erroneous Control Channel, Narasimha Rao Banavathu and Mohammed Zafar Ali Khan, IEEE WCNC 2016, March 2016

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Yoghitha R, and A. Kumar, Proceedings of the COMSNETS, 2017.

eTVSQ based Video Rate Adaptation in Cellular Networks With alpha-Fair Resource Allocation, N. Eswara, S. Channappayya, A. Kumar, and K. Kuchi, Proceedings of the WCNC, 2016.

Key Exchange Protocols for Secure Device-to-Device Communications in 5G, R. Sedidi and A. Kumar, Proceedings of the Wireless Days, 2016.

Base Station Switching With CoMP in Cellular Networks, Yoghitha R, and A. Kumar, Proceedings of the NCC, 2016.

Fuzzy logic based cell selection framework for downlink uplink decoupled cellular networks, S. Sandeep Kumar, A. Kumar, and K. Detroja, Proceedings of the NCC, 2016.

Energy efficient rate coverage with base stations switching and load sharing in cellular networks, S. Sandeep Kumar and A. Kumar, Proceedings of the COMSNETS, 2016

A Feasible Cellular Internet of Things: Enabling Edge Computing and the IoT in Dense Futuristic Cellular Networks, Sreekanth Dama, Valin Sathya, Kiran Kuchi, and Thomas Valerrian Pasca, IEEE Consumer Electronics Magazine, 6, 2017, 66

Reduced state MAP algorithm with modified branch metric, Nanda Kishore Chavali, Dharma Teja Bade, Anusha Kilari, and Kiran Kuchi, International Conference on Signal Processing and Communications (SPCOM), 1 (2016)

A common framework for ML detection of spatially multiplexed and space time coded MIMO signals and reducing its computational complexity, Nanda Kishore Chavali, Sheela Mounika, Kiran Kuchi, International Conference on Signal Processing and Communications (SPCOM), 1 (2016)

A novel RACH mechanism for dense Cellular-IoT deployments, Sreekanth Dama, Thomas Valerrian Pasca, Vanlin Sathya, and Kiran Kuchi, IEEE Wireless Communications and Networking Conference, 1 (2016)

TVSQ based video rate adaptation in cellular networks with -fair resource allocation, Nagabhushan Eswara, Sumohana Channappayya, Abhinav Kumar, and Kiran Kuchi, IEEE Wireless Communications and Networking Conference, 1 (2016)

A novel RACH mechanism for dense cellular-IoT deployments, Sreekanth Dama, Thomas Valerrian Pasca, Vanlin Sathya, and Kiran Kuchi, IEEE Wireless Communications and Networking Conference Workshops (WCNCW), 163 (2016)

A Five speed 45-Phase Induction Motor Drive with Pole Phase Modulation for Electric Vehicles, B. Prathap Reddy, B. S. Umesh, Madhukar Rao A, B. V. Ravi Kumar, and K. Siva Kumar, IEEE ICIT, Toronto, Ontario, Canada, 22-25 March 2017

Multilevel Inverter Configuration for Standalone Photovoltaic Generation System Using Three phase Two-Level Inverters, A. Madhukar Rao, K. Sivakumar, and B. S Umesh, IECON, Florence, Italy, 24-27 October 2016.

Pole-Phase Modulated Multiphase Induction Motor Drive with Improved Dc Link Utilization, B. S. Umesh, K. Sivakumar, and A Madhukar Rao, IECON, Florence, Italy, 24-27 October 2016.

A single source fed three level voltage boost NPC inverter with reduced LC count, M. Sahoo and K. Siva Kumar, IECON, Florence, Italy, 3190 (2016)

A three phase five level inverter with fault tolerant and energy balancing capability for photovoltaic applications, A. Madhukar Rao, M. Sahoo and K. Siva Kumar, IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum, India (2016)

Nonlocal Means Kernel Regression Based Despeckling of Bmode Ultrasound Images, R. Bharath, R. Rajalakshmi, 18th International Conference on E-health Networking, Application & Services (HealthCom), Munich, Germany, 14-17 September 2016

Smartphone Based Automatic Abnormality Detection of Kidney in Ultrasound Images, Pallavi Vaish, R. Bharath, P. Rajalakshmi, 18th International Conference on E-health Networking, Application & Services (HealthCom), Munich, Germany, 14-17 September 2016

Performance Analysis of IEEE 802.15.4 MAC Layer: Prospect for Multi-hop Networks, M. P. R. Sai Kiran, Y. R. V. Prasad, V. Subrahmanyam, and P. Rajalakshmi, 10th IEEE International Conference on Advanced Networks and Telecommunications Systems(ANTS), J N AUDITORIUM, IISc, BANGALORE, INDIA, 6-9 November 2016

Varible rate LPPT based droop controlled operation of a photovoltaic system for microgrid frequency regulation, V. Janaki Ramaiah, M. K. K. Reddy and V. Sarkar, Proc. IEEE Int. Conf. Power Electron., Drives, and Energy Syst. (PEDES), Trivandrum, 14-17December 2016.

Integrated energy and transmission pricing, S. R. Vaishya and V. Sarkar, Proc. Annual IEEE India Conf. (INDICON 2016), IISC Bangalore, 16-18 December 2016.

LPPT control of a photovoltaic system under partially shaded condition, M. K. K. Reddy and V. Sarkar, Proc. IEEE Int. Conf. Sustainable Green Buildings and Communities (SGBC), IIT Madras, 18-20 December 2016

A comparative study on phasor and frequency measurement techniques in power systems, A. Sridharan and V. Sarkar, Proc. National Power Syst. Conf. (NPSC), IIT Bhubaneswar, 19-21 December 2016

Design and performance analysis of wide area controller in the presence of multiple load types, N. R. Naguru and V. Sarkar, Proc. National Power Syst. Conf. (NPSC), IIT Bhubaneswar, 19-21 December 2016.

Funded Research Projects 2016-17

Lakshmi Prasad Natarajan, Index Coding for Wireless Communications, DST, July 2016, Rs. 35.00 Lakhs.

Amit Acharyya, Low-Complexity Architectures and Subsequent System on Chip Design for Under-determined Blind Source Separation Problem, SERB- DST, July 2016, Rs. 21.29 Lakhs.

G. V. V. Sharma, Development of Encoder and Decoder Modules for Low-Density Parity Check Code with Variable Rates and Block Lengths, BHEL,16 September 2016, Rs. 13.77 Lakhs.

Amit Acharyya, Design of High Speed N X N Packet Switch & Implementation for FPGA, RCI, DRDO, November 2016, Rs. 10.00 Lakhs

Amit Acharyya, Development of algorithm for de-interleaving of pluses vectors using BSS method, DLRL, DRDO, December 2016, Rs. 10.00 Lakhs.

Abhinav Kumar, Energy Efficient Lighting with Visible Light based Communication and Power Line Communications, DST, December 2016, Rs. 60.00 Lakhs.

Shiv Govind Singh, Development of conductive nanowire based Biosensor for detection of Genetic Changes, BRNS, 2017, Rs. 34.00 Lakhs.

Amit Acharyya, National Post-Doctoral Fellowship for Dr. Kiran A, SERB-DST, January 2017, Rs.19.20 Lakhs.

Swati Gupta, Development of Flexible Charge Transport Layers for Organic Solar Cells, DST, March 2017, Rs. 50.00 Lakhs.

Talks Given in National / International Conferences

K. Sri Rama Murthy, Invited talk, Parametric Modelling of Fourier Phase for Speech Analysis – Research Colloquium on Recent Advances in Signal Processing at RIT Kottayam, Kerala, 2016

K. Sri Rama Murthy, Invited talk, Significance of Analytic Phase of Speech for Speaker Recognition, Summer School on Speech Source Modelling and its Applications at Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar, 2016.

K. Sri Rama Murthy, Tutorial on Energy based Models for Unsupervised Learning, – TEQIP Workshop on Deep Learning at IIT Hyderabad, 2016.

Suryasnata Tripathy, Deep Khandavalli, Anshika Agarwal, Siva Rama Krishna Vanjari and Shiv Govind Singh, Facile, Low-cost, Halochromic Platform using Electrospun Nanofibers for Milk Adulteration Detection, IEEE, ICE2016.

Jose Joseph, Shiv Govind Singh and Siva Rama Krishna Vanjari, Analysis of Low Temperature E-Beam Evaporated Amorphous Silicon Thin Films for MEMS Applications, IEEE, ICE2016.

D. V. Santhosh Kumar Gunapu, Shiv Govind Singh and Siva Rama Krishna Vanjari, Flexible, biocompatible, highly scalable, high charge density 3D Microelectrode arrays, IEEE, ICE2016.

K. T. Hafeez, Ashudeb Dutta, and S. G. Singh, Transient Suppression with Pseudo Error Voltage Technique for Wide Supply Range Automotive DC-DC Converters, MWSCAS-2016

Jose, Sarswati, S. G. Singh, S. R. Vanjari, Silk Piezoelectric Thin Films sensors, Orlando Florida, USA2016

Brince Paul, S. R. Vanjari, S. G. Singh, Zinc Oxide Nanowire Modified Flexible Plastic Platform for Immunosensing sensors, Orlando Florida, IEEE Sensors, USA2016.

K. T. Hafeez, Ashudeb Dutta, Shiv Govind Singh, Krishna Kanth Gowri Avalur, A low-cost multi-phase 3A buck converter with improved ripple cancellation for wide supply range, ISCAS 2016, 1618.

Nagaveni Vamsi, V. Priya, Ashudeb Dutta, Shiv Govind Singh, A 1V, -26dBm Sensitive Auto Configurable Mixed Converter Mode RF Energy Harvesting With Wide Input Range, IEEE ISCAS 2016.

Satish Bonam, Asisa Kumar Panigrahi, Shikhar Jain, Siva Rama Krishna Vanjari, and Shiv Govind

Singh, Ultra-thin Gold Passivation as a Viable Alternative for Achieving Low Temperature, Low Pressure Cu-Cu Thermocompression Bonding, 13th International Wafer-level Packaging Conference, 2016.

Asisa Kumar Panigrahi, Satish Bonam, Tamal Ghosh, Siva Rama Krishna Vanjari, and Shiv Govind Singh, Low Temperature CMOS compatible Cu-Cu thermo-compression bonding with constantan alloy passivation for 3D IC Integration, 3D Systems Integration Conference (3DIC), 2016

Suraj Patil, Asisa Kumar Panigrahi, Satish Bonam, C.Hemanth Kumar, and Shiv Govind Singh, Improved noise coupling performance using optimized Teflon liner with different TSV structures for 3D IC integration, 3D Systems Integration Conference (3DIC), International IEEE, 2016

Kumail Khurram, Asisa Kumar Panigrahi, Satish Bonam, and Shiv Govind Singh, Novel Inter Layer Dielectric and Thermal TSV material for enhanced heat mitigation in 3D IC, 3D Systems Integration Conference (3DIC), International (IEEE Xplore), 2016

P. Sahatiya, S. S. Jones, P. T. Gomathi, S. Badhulika, Flexible substrate based 2D graphene (p)/ZnO (n) heterojunction architecture as nanodiode rectifier, 3rd International Conference on Emerging Electronics, IIT Bombay, Mumbai, India, 27-30 December 2016

R. Sha and S. Badhulika, Non-enzymatic detection of urea using Graphene-Polyaniline composite," International conference of Young Researchers on Advanced Materials, IISc Bangalore, India, 11-15 December 2016

A. Gopalakrishnan, P. Sahatiya, S. Badhulika, Electrospun mesoporous silica templated hybrid carbon nanofiber for supercapacitor electrodes," International Conference of Young Researchers on Advanced Materials, IISc Bangalore, India, 11-15 December 2016.

P. Rajalakshmi, Invited Talk, ComNeT-IoT 2016, India, December 2016

P. Rajalakshmi, Invited Talk, APNOMS 2016, Japan, October 2016

Workshops / Symposiums Organised

Digital Design through Arduino

Octave for Math Computing

Other Events

TEQIP Workshop on Nano-Sensors: Design, Principles and Applications, December 3-7, 2016; Dr. Amit Acharyya, Dr. Sushmee Badhulika and Dr. Ashudeb Dutta

Awards / Recognitions

Lakshmi Prasad Natarajan, Recognized as Exemplary Reviewer by the Editorial board of IEEE Wireless Communications Letters

Shiv Govind Singh, Runner up : Cadence Design Contest 2016

Amit Acharyya, Recipient of Visvesvaraya Young Faculty Fellowship Award 2016 by the Department of Electronics and Information Technology (DEITY), Ministry of Communications and IT, GoI

Amit Acharyya, Recipient of Early Career Research Grant from the Science and Engineering Research Board (SERB), Department of Science and Technology, GoI in 2016

Amit Acharyya, Visiting research Fellow in the University of Southampton, UK from 2016-2017

Mohammed Zafar Ali Khan, Best paper in Networks 2016

Abhinav Kumar, Best Paper honorable Mention in COMSNETS 2016

P. Rajalakshmi, Ultra Compact IoT Enabled Power Monitor Device" won the Bronze Medal in Seoul Internation Invention Fair 2016

P. Rajalakshmi, Best Paper Award in IECBES-IEEE EMBS Conference of Biomedical, Engineering and Sciences

P. Rajalakshmi, Digital Trail Blazer Award" for Telangana by India Today in June 2016

P. Rajalakshmi, Recipient of 'Digital Trail Blazer Award 2016' by India Today in December 2016 at National Level

P. Rajalakshmi, IoT Enabled Power Monitor was part of the showcase at India International Innovation Fair at Bangalore 9-11 September 2016, which bagged

P. Rajalakshmi, Gold medal - Best National Invention from International Federation of Inventors' Association (IFIA).

P. Rajalakshmi, Gold medal - Recognition of Creativity & Innovation - IIIFair 2016

P. Rajalakshmi, Gold medal - Contribution To Innovation from Republica Portuguesa

LIBERAL ARTS

The Department of Liberal Arts comprising of 12 faculty members offers courses in various disciplines including Anthropology, Cultural Studies, Economics, English, Linguistics, Psychology, and Sociology. The Liberal Arts faculty has published book chapters, journal papers and a book in the year 2016-2017. Also, faculty have been invited for talks at various conferences and seminars, both national and international. The department organized workshops and seminars in social science and humanities disciplines including the celebration of World Mental Health Day in November 2016 aimed at spreading mental health awareness. The department has successfully graduated M.Phil. and Ph.D. students in different disciplines this year.

Badri Narayan Rath
Ph.D – ISEC, Bangalore

Associate Professor & HoD

Research Areas: Economic Growth, Industrial Economics, International Economics, Applied Econometrics

Shubha Ranganathan
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Cultural psychology, women and mental health, qualitative methods, and critical psychology

Indira Jalli
Ph.D – Hyderabad Central University

Associate Professor

Research Areas: Nation and Culture

Haripriya Narasimhan
Ph.D – Syracuse University - NY, USA

Assistant Professor

Research Areas: India, South Asia, Gender, Medical Anthropology, Media anthropology

K.P. Prabheesh
Ph.D – IIT Madras

Assistant Professor

Research Areas: Macroeconomics, International trade, and finance, and applied econometrics

Nandini Ramesh Sankar
Ph.D – Cornell University, USA

Assistant Professor

Research Areas: Modernism, Postmodernism, Visual Arts, Philosophy

Amrita Deb
Ph.D – BHU, Varanasi

Assistant Professor

Research Areas: Positive psychology, clinical psychology and personality psychology

Prakash Chandra Mondal
Ph.D – IIT Delhi

Assistant Professor

Research Areas: Theoretical Linguistics-Philosophy of Language -Cognitive Science

Srirupa Chatterjee
Ph.D – IIT Kanpur

Assistant Professor

Research Areas: Contemporary and Multiethnic American Fiction, Gender and Body Studies

M.P. Ganesh
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Eco Friendly Behaviours, Cross-Cultural Collaboration, Virtual and Distributed Teams, Teacher Leadership, Mentoring Behaviour

Mahati Chittem
Ph.D – University of Sheffield, UK

Assistant Professor

Research Areas: Psycho-oncology, illness beliefs, interpretative phenomenological analysis

Anindita Majumdar
Ph.D – IIT Delhi

Assistant Professor

Research Areas: Kinship, Reproduction, Infertility, Gender, Sexuality, Medical Anthropology, Masculinities

Books and Book Chapters

Prakash Mondal, Natural Language and Possible Minds: How Language Uncovers the Cognitive Landscape of Nature: Amsterdam/New York, Brill (2017).

Shubha Ranganathan, 'God's hospitals' with 'No Superstition!' On the place of healing shrines in contemporary India. In B.V. Sharma (Ed.). Medical anthropology: Tradition and change. New Delhi: Concept Publishing Company (2017).

Haripriya Narsimhan, Obtaining 'fruit':Sorcery and Illness in Rural Tamilnadu. In B.V. Sharma (ed) Medical Anthropology: Tradition and Change. Concept Publishing Company (2017).

T. Ryser, E. Angerer, M.P. Ganesh, and H. Schulze, Towards a model of collective competences for globally distributed collaborations. In Space, Place and Global Digital Work, Palgrave Macmillan UK, 201-225 (2017).

Anindita Majumdar, Recruiting to Give Birth: Agent-Facilitators and the Commercial Surrogacy Arrangement in India. (with Sarojini N.), in Miranda Davies (Ed.), Babies for Sale? Transnational Surrogacy, Human Rights and the Politics of Reproduction. UK: Zed Books, 2017.

Anindita Majumdar, Researching Assisted Conception from a Feminist Lens (with Sarojini N.), in Padmini Swaminathan and Kalpana Kannabiran (Eds), Re-presenting Feminist Methodologies: Interdisciplinary Explorations, New Delhi: Routledge (2017).

Publications
(in peer reviewed journals)

Badri Narayan Rath, Does the Digital Divide across Countries Lead to Convergence? New International Evidence, Economic Modelling, 58, 75-82 (2016).

Debi Prasad Bal and Badri Narayan Rath, Is Public Debt a Burden for India? Economic Papers: A Journal of Applied Economics and Policy, 35, 184-201 (2016).

Badri Narayan Rath and Aruna Kumar Dash, Supply Response of Milk Production: Analysis and Implications for BRIC Countries, Poulomi Bhattacharya, Applied Econometrics and International Development, 16, 179-192 (2016).

Amrita Deb, A qualitative exploration of positive psychology concepts in the film Wadjda and implications for future research, Journal of Human Behavior in the Social Environment, 26(6), 521-532 (2016)10.1080/10911359.2015.1091245.

Anindita Ghosh and Amrita Deb, Positive psychology progress in India: Accomplishments and pathways ahead, Psychological Studies, 61(3), 113-125(2016)10.1007/s12646-016-0367-5.

Shubha Gomathy, Mahati Chittem, and N. Muppavaram, A review of literature on diabetes self-management: Suggestions for research and practice in India, Journal of Social Health and Diabetes, 4, 108-114 (2016).

Haripriya Narasimhan, Review of Birth in the threshold of AIDS, By Cecilia Van Hollen, Anthropological Quarterly, 89, 1317-1322 (2016).

Sonali Mohapatra and Badri Narayan Rath, Exchange Rate Exposure and its Determinants: Evidence from Indian Firms, The International Trade Journal, 31, 197-211 (2017).

Badri Narayan Rath and Vaseem Akram, Export Diversification and Total Factor Productivity Growth in Case of South Asian Region, Journal of Social and Economic Development, (2017), 10.1007/s40847-017-0037-z.

Vaseem Akram and Badri Narayan Rath, Exchange Rate Misalignment and Total Factor Productivity Growth in case of Emerging Market Economies, International Economics and Economic Policy, (2017),10.1007/s10368-017-0374-6.

Badri Narayan Rath and Amrita Deb, Behavior and attitude towards avoidance of regular health checkups: A case study from Telangana state, Journal of Health Management, 19 (1), 1-12 (2 017),10.1177/0972063416682646.

Anindita Ghosh and Amrita Deb, Positive psychology intervention and chronic illness: A theoretical framework, Indian Journal of Community Psychology, 13(1), 180-189 (2017).

Aswini, S. and Amrita Deb, Flourishing among postgraduate students: The role of resilience, meaningfulness and grit, Indian Journal of Community Psychology, 13(1), 24-37 (2017).

Nandini Ramesh Sankar, Complicity and Cambridge Poetry, Textual Practice (2017),http://dx.doi.org/10.1080/0950236X.2016.1237991.

Funded Research Projects 2016-17

Amrita Deb, Badri Narayan Rath (co-PI) Resilience and Mental Health among Young Urban Adults Who Have Overcome Childhood Adversities, ICMR, 1 March 2017, Rs. 11.2 Lakhs

Anindita Majumdar, From Human Waste into Profitable Resource: Gender, Biopolitics and Neo-Liberalism in Indian Commercial Surrogacy, Swedish Research Council, Swedish Kronor 7 million, December 2016.

Talks Given in National / International Conferences

Mahati Chittem, Shubha Gomathy, Shweta Chawak, Shravanthi N. Maya, Muppavaram S. Kameswari, and L. Lingappa, Miles to go before we sleep: How illness experiences shape health behaviours in India, Paper presented at the joint BPS Division of Health Psychology and European Health Psychology Society Conference, Aberdeen, U.K, 2016.

Mahati Chittem, N. Muppavaram, Shweta Chawak, and L. Lingappa, Illness Perceptions, Psychological Well-Being, and Unmet Needs Among Indian Parents of Children With Neurological Illnesses, Poster presented at the joint BPS Division of Health Psychology and European Health Psychology Society Conference, Aberdeen, U.K., 2016.

K.P. Prabheesh, Technological shocks, Business Cycle and Stock Market Performance, The 7th RMUTP International Conference on Science, Technology and Innovation for Sustainable Development, Bangkok, Thailand, 23-24 June 2016.

M. P. Ganesh, M. Angeles, and P. Vázquez-Rodríguez, Individualism-Collectivism as Moderators Between Self-Efficacy and Intention to Mentor Among University Teachers in India and Spain, 23rd International Congress of International Association of Cross-Cultural Psychology held at Nagoya, Japan, 24 July – 4 August 2016.

Shubha Ranganathan, Queering Psychology in India: The Need for Critical Perspectives, 31st International Congress of Psychology in Yokohama, Japan, 24-29 July 2016.

Badri Narayan Rath, Lectures on Index of Industrial Production (IIP) and ASI Data, for Officers of the Directorate of Economics & Statistics, Department of Planning, Government of Maharashtra, Organized by ASCI Hyderabad, 29 July 2016.

Amrita Deb, Understanding Resilience in a Multicultural Society: The Indian Perspective, Plenary Roundtable at the Third World Congress on Resilience and Culture, organized by the Resilio Association, University of Quebec at Trois-Rivières, Canada, 22-24 August 2016.

K.P. Prabheesh, Structural VARs and its Applications, School of Economics, University of Hyderabad, Applied Financial Econometrics Workshop, 19-23 September 2016.

Badri Narayan Rath, Lecture on Basic Time Series Forecasting Techniques and Application, Workshop on Applied Financial Econometrics, School of Economics, University of Hyderabad, 21 September 2016.

Shubha Ranganathan, Global Pharmaceuticals In A Religious Shrine: Questions about Community Psychiatry in India, INTAR international conference Trans-cultural dialogues about mental health, extreme states and alternatives for recovery in Lavasa, Pune, India, 26-28 November 2016.

Badri Narayan Rath, Does Exchange Rate Misalignment Matter for TFP Growth in case of Emerging Market Economies? 53rd Annual Conference of Indian Econometric Sociaety, NISER, Bhubaneswar, 22-24 December 2016.

M. P. Ganesh, M. Angeles, and P. Vázquez-Rodríguez, Effect of Self-Leadership on Intention to Mentor among University Teachers: A Cross-Cultural Study, 26th Annual Conference of NAoP, IIT Madras, India, 28-31 December 2016.

Nandini Ramesh Sankar, The Fabrication of Self in Denise Riley's Mop Mop Georgette, in the special session titled The Laboring Subject in Women's Poetry organized by Nandini Ramesh Sankar, Annual Convention of the Modern Languages Association, Philadelphia, 5-8 January 2017.

Haripriya Narsimhan, Stories from the Small Screen: An Ethnographic Study of The Hindi Television Soap Opera World, Department of Inter-Disciplinary Studies, University of Tokyo, Japan, 18 January 2017.

Badri Narayan Rath, Lectures on Panel Data Models, Workshop on Time series and Panel Data Modeling and Forecasting, GITAM University, Visakhapatnam, 26 January 2017.

Badri Narayan Rath, Productivity Growth and Efficiency Change: Comparing Manufacturing- and Service Based Firms in India, 3rd International Conference on Applied Economics and Finance, GITAM University, Visakhapatnam, 28 January 2017.

K.P. Prabheesh, Time Series Econometrics, Centre for Economic and Social Studies (CESS), Hyderabad, 7-8 February 2017.

Srirupa Chatterjee, Urbanity, Visual Cultures and Appearance Discrimination in Short Fiction by Contemporary American Women Writers, National Seminar on Gendered Urban Spaces: Narratives of Self-Possession, The IIS University, Jaipur with ICSSR,17-18 February 2017.

Talks/Presentations organized

Geographies of care and intimacy: Early insights from oral histories of informal sector migrants in Delhi and Hyderabad, Prof. Priti Ramamurthy, Professor and Chair of the Department of Gender, Women and Sexuality Studies at the University of Washington, Seattle, 17 August 2016.

Always Already Political? Furbishing an Archaeology of Rights in India, Dr. AmitUpadhyay, Faculty in the area of Public Policy, TISS, Hyderabad, 24 August 2016.

Handle with Care: Contributions of behavioural cardiology, Prof. Meena Hariharan, Founder Head of Centre for Health Psychology, University of Hyderabad, 14 September 2016.

Modeling coarticulation in dense coronal systems: Evidence from Malayalam, Dr. Indranil Dutta, English and Foreign Languages University (EFLU), Hyderabad, 28 September 2016.

Technoscience and Values, Prof. Prajit K. Basu, Professor Department of Philosophy, University of Hyderabad, 19 October 2016.

Full-blooded Desi Romance: Contemporary English-language Romance Novels in India, Dr. Kristen Rudisill, Bowling Green State University, US, 26 October 2016.

Memory, Storytelling and Agency: Through the Literary Glass, Dr. Avishek Parui, Department of Humanities and Social Sciences, IIT Guwahati, 2 November 2016.

Do worker layoffs influence corporate investment? New global evidence, Prof. Paresh Narayan, Deakin University, 9 November 2016.

De-kinning in the IVF Clinic: The Commodification of Eggs and Eggs Donors, Dr. Anindita Majumdar, Assistant Professor. Department of Liberal Arts, IIT Hyderabad, 11 January 2017.

ICTs and Knowledge Work Practices: Affordances, Constraints, and the Interweaving of Human and Material Agencies. The Case of the Use of GIS in Historical Research, Dr. Ratandeep Suri, Former Research Fellow at Nanyang Technological University Singapore's (NTU), 18 January 2017.

The Role of Calling in Vocational Decision-making: A Recent Innovation in Career Psychology, Dr. John Stewart, Professor Emeritus, University of New Brunswick and Visiting Professor, Acadia Divinity College, 25 January 2017.

Macroeconomic Effects of Demonetization in India: Policy Simulations using a Macro Econometric Model for India, Prof. K.N. Murty, Adjunct Faculty at C.R. Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS), 8 February 2017.

Anthropology and Colonialism in British India, Prof. Chris Fuller, Professor Emeritus, Department of Anthropology, London School of Economics, 15 February 2017.

Understanding Desire, Family and Marriage: A Qualitative study of gay men in Odisha, India, Jayaprakash Mishra, PhD student, Department of Liberal Arts, IIT Hyderabad, 22 February 2017.

Feminist Research: Redefining Methodology in the Social Sciences, Prof. Aparna Rayaprol, Professor and Head, Department of Sociology, University of Hyderabad, 1 March 2017.

The formal creation of informality: How Government of India contributed to making women workers invisible and informal, Prof. Padmini Swaminathan, Professor in Tata Institute of Social Sciences, Hyderabad, 8 March 2017.

Informal workers and issues of health and health care, Dr. Mithun Som, researcher in Anveshi Research Centre for Women's Studies, Hyderabad, 5 April,2017

CHANGE – The POWER in you, Dr. Renu Khanna, Founder and CEO of HUMEX – Enabling Human Excellence, 12 April, 2017

Other Events

Badri Narayan Rath organized the GIAN course on Applied Financial Modelling, IIT Hyderabad, 8-12 July 2016.

M.P. Ganesh organized the GIAN Faculty Development Programme titled Teacher Effectiveness in collaboration with Telangana Academy for Skill and Knowledge (TASK). This programme venue was at TASK premises, Begumpet, Hyderabad, 21-22 October 2016.

Shubha Ranganathan organized World Mental Health Day, 8-9 November 2016.

M.P. Ganesh organized the GIAN course on Social Network Theory, Prof. Israr Qureshi from IE Business School Spain offered the course, 17-23 December 2016.

M.P. Ganesh organized the GIAN course on Social Network Analysis, Prof. Israr Qureshi from IE Business School Spain offered the course, 18-23 December 2016.

M.P. Ganesh organized the TEQIP Teacher Effectiveness Workshop for Women Teachers, 3-4 March 2016.

Awards / Recognitions

Badri Narayan Rath, Best Paper Award (in the faculty category) in 3rd International Conference in Applied Economics and Finance organized by GITAM University, Visakhapatnam in association with the Indian Econometric Society, January 2017.

MATERIALS SCIENCE & METALLURGICAL ENGINEERING

The FY 2017-17 remained quite successful for the department of MSME on several fronts. More than 30 journal papers were published and several sponsored projects from government and private industries were awarded to the department. The department emerged successful in receiving a DST-FIST grant of 2.75 crores for procuring a state of the art scanning electron microscope. The department successfully organized a national and an international workshop during this period. In addition, several GIAN and TEQIP courses were organized by the department. The MSME research students continued to bring laurels to the department. One of the MSME PhD students received the prestigious Alexander Van Humboldt fellowship for carrying out postdoctoral research in Germany while another student received the prestigious Ludo Frevel crystallography scholarship for the year 2016. MSME faculty also received recognition in the form of guest editorial position in a leading international journal.

Pinaki Prasad Bhattacharjee
Ph.D – IIT Kanpur

Associate Professor & HoD

Research Areas: High Entropy Alloys, Thermo-mechanical Processing, Crystallographic Texture, Mechanical Behavior

Saswata Bhattacharya
Ph.D – IISc Bangalore

Assistant Professor

Research Areas: Microstructural evolution, Phase transformations, Phase-field modeling

Suhash Ranjan Dey
Ph.D – University Paul-Verlaine - Metz, France

Associate Professor

Research Areas: Titanium alloys – CIGS/ CZTS solar cells – Electrodeposition

Subhradeep Chatterjee
Ph.D – IISc, Bangalore

Assistant Professor

Research Areas: Phase Transformations, Electron Microscopy, Welding and Solidification Processing, Microstructural Modelling

Bharat B. Panigrahi
Ph.D – IIT Kharagpur

Associate Professor

Research Areas: Powder Metallurgy, Sintering, nanocrystalline materials, light alloys, High Entropy alloys, Ceramics, Composites

Mudrika Khandelwal
Ph.D – University of Cambridge, UK

Assistant Professor

Research Areas: Bacterial cellulose and other natural materials- understanding structure, mechanism and applications, high performance green composites, liquid crystals and self-assembly of rod-like entities, fibre spinning, strategies for developing anti-fouling and anti-microbial materials, materials for tissue scaffolding

Ranjith Ramadurai
Ph.D – IISc Bangalore

Associate Professor

Research Areas: Thin films, PLD, multiferroics, piezoelectrics, hybrid materials, nano-composites

Rajesh Korla
Ph.D – IISc Bangalore

Assistant Professor

Research Areas: Deformation at room temperature, creep and superplasticity, micro mechanical deformation, molecular dynamic simulations, nano indentation

Atul Suresh Deshpande
Ph.D – Max-Plnack Institute of Colloids and Interfaces - Potsdam, Germany

Assistant Professor

Research Areas: Material Synthesis, battery materials, solid state chemistry

Sai Rama Krishna Malladi
Ph.D – Technische Universiteit Delft, The Netherlands

Assistant Professor

Research Areas: In-situ Transmission Electron Microscopy, Electrochemistry & Corrosion

Patents Filed

An improved process for the preparation of stable nano silver suspension having antimicrobial activity, Janardhanan Revathi, Nellipudi Satya Moulika, Avvaru Venkata Sai, Atul Suresh Deshpande, Karuppiah Murugan, Neha Yeshwanta Hebalkar, Ravula Vijay, Tata Narasinga Rao, Govindan Sundararajan, Indian Pat. Appl. (2016) 201611102714.

Improved process for Wood derived Carbon - Metal oxide composites prepared by nanocasting of wood for electrode materials in lithium ion batteries, Janardhanan Revathi, Atul Suresh Deshpande, Tata Narasinga Rao, Indian Pat. Appl. (2016) 201611034531.

Publications
(in peer reviewed journals)

S. R. Reddy, M. Z. Ahmed, G. D. Sathiaraj, P. P. Bhattacharjee, Effect of strain path on microstructure and texture formation in cold-rolled and annealed FCC equiatomic CoCrFeMnNi high entropy alloy, Intermetallics, 87, 94-103 (2017).

S. S. S. Kumar, T. Raghu, P. P. Bhattacharjee, G. A. Rao, and U. Borah, Work hardening characteristics and microstructural evolution during hot deformation of a nickel superalloy at moderate strain rates, Journal of Alloys and Compounds, 709, 394-409 (2017).

I. S. Wani, T. Bhattacharjee, S. Sheikh, I. T. Clark, M. H. Park, T. Okawa, S. Guo, P. P. Bhattacharjee, and N. Tsuji, Cold-rolling and Recrystallization Textures of a Nano-lamellar AlCoCrFeNi2.1 Eutectic High Entropy Alloy, Intermetallics, 84, 42-51 (2017).

I. S. Wani, T. Bhattacharjee, S. Sheikh, P. P. Bhattacharjee, S. Guo, and N. Tsuji, Tailoring nanostructures and mechanical properties of AlCoCrFeNi2.1 eutectic high entropy alloy using thermo-mechanical processing, Materials Science and Engineering A 675, 99-109 (2016).

G. D. Sathiaraj, C. W. Tsai, J. W. Yeh, M. Jahazi, and P. P. Bhattacharjee, The effect of heating rate on microstructure and texture formation during annealing of heavily cold-rolled equiatomic CoCrFeMnNi high entropy alloy, Journal of Alloys and Compounds, 688, 752-761 (2016).

I. S. Wani, G. Dan Sathiaraj, M. Z. Ahmed, S. R. Reddy, and P. P. Bhattacharjee, Evolution of microstructure and texture during thermo-mechanical processing of a two phase Al0.5CoCrFeMnNi high entropy alloy, Materials Characterization,118, 417-424 (2016).

S. Satheesh, T. Raghu, Pinaki P. Bhattacharjee, G. Appa Rao, and U. Borah, Strain rate dependent microstructural evolution during hot deformation of a hot isostatically processed nickel base superalloy, Journal of Alloys and Compounds, 681, 28-42 (2016).

I. S. Wani, T. Bhattacharjee, S. Sheikh, Y. Lu, S. Chatterjee, P. P. Bhattacharjee, S. Guo, and N. Tsuji, Ultrafine grained AlCoCrFeNi2.1 eutectic high entropy alloy, Materials Research Letters 4 (2016) 174-179.

G. D. Sathiaraj, M. Z. Ahmed, and P.P. Bhattacharjee, Microstructure and texture of heavily cold-rolled and annealed fcc equiatomic medium to high entropy alloys, Journal of Alloys and Compounds, 664, 109-119 (2016).

G. D. Sathiaraj, P. P. Bhattacharjee, Che-Wei Tsai, and Jien-Wei Yeh, Effect of heavy cryo-rolling on the evolution of microstructure and texture during annealing of equiatomic CoCrFeMnNi high entropy alloy, Intermetallics, 69, 1-9 (2016).

P. Srinivas and Suhash R. Dey, Thermal Stability of Pulse Plated Gold films: SEM-EBSD studies, Advanced Materials Science, 2017, 10.15761/AMS.1000118.

Rahul Sharma, Yogendra Chouryal, Sushmita Chaudhari, Jeganathan Saravanakumar, Suhash R. Dey, and Pushpal Ghosh, Adsorption-Driven Catalytic and Photocatalytic Activity of Phase Tuned In2S3 Nanocrystals Synthesized via Ionic Liquids, ACS Applied Materials & Interfaces, 9(13), 11651-11661 (2017).

K. Basanth Kumar, Kuldeep K. Saxena, Suhash R. Dey, Vivek Pancholi and Amit Bhattacharjee, Processing map-microstructure evolution correlation of hot compressed near alpha titanium alloy (TiHy600), Journal of Alloys and Compounds, 691, 906-913 (2017).

K. Basanth Kumar, Kuldeep K. Saxena, Suhash R. Dey, Vivek Pancholi and Amit Bhattacharjee, Microstructure evolution in hot compressed TiHy600 titanium alloy, Journal of Metallurgical and Materials Science, 58(3), 147-152 (2016).

H. Prasad, S. Singh, and B. B. Panigrahi, Mechanical activated synthesis of alumina dispersed FeNiCoCrAlMn high entropy alloy, Journal of Alloys and Compounds, 692 720-726 (2017).

Rajkumar Yembadi and Bharat B. Panigrahi, Thermodynamic Assessments and Mechanically Activated Synthesis of Ultrafine Cr2AlC MAX Phase Powders, Advanced Powder Technology, 28 732-739 (2017).

Y. Rajkumar and Bharat B. Panigrahi, Non-isothermal Sintering Kinetics of Cr2AlC Powders, Int. J. Appl. Ceram. Technol., 14, 63-67 (2017).

Y. Rajkumar and Bharat B. Panigrahi, Sintering Mechanisms of Ultrafine Cr2AlC Powders, Materials Today Communications, 8, 46–52 (2016).

Venkateswara Rao Mannepalli and Ranjith Ramadurai, Studies on Local Structural Inhomogeneity and Origin of Ferroelectricity in Yttrium chromite Ceramics, MRS advances, 1, 609-614 (2016) 10.1557/adv.2016.222.

Venkateswara Rao Mannepalli, Rajamani Raghunathan, R. Ranjith, A. David and W. Prellier, Local Structural Distortion and Interrelated Phonon Mode Studies in Yttrium Chromite, Journal of Materials Research, 201710.1557/jmr.2017.5.

Venkateswara Rao Mannepalli and Ranjith Ramadurai, Structural and Electrical Transport studies in Bi-Substituted Yttrium chromite, Journal of Materials Science: Materials in Electronics, 2017 10.1007/s10854-017-6514-5.

K. Prabhahar, R. Ranjith, A. Srinivas, S. V. Kamat, B. Mallesham, V. L. Niranjani, J. Paul Praveen and Dibakar Das, Effect of deposition temperature on the microstructure, ferroelectric and mechanical properties of lead free BCZT ceramic thin films, Ceramic International, 2017,http://dx.doi.org/10.1016/j.ceramint.2017.01.032.

Kumaraswamy Miriyala and Ranjith Ramadurai, Microstructural influence on piezoresponse and leakage current behavior of NaO.5BiO.5TiO3 Thin Films, MRS Advances, 1-6, May 2016, 10.1557/adv.2016.350.

Soumya Bandyopadhyay, Tushar Jogi, Kumaraswamy Miriyala, Ranjith Ramadurai, and Saswata Bhattacharyya, A phase-field study of domain dynamics in ferroelectric BCT-BZT system, MRS Advances, 2016, doi:10.1557/adv.2016.384.

L. Hong, L. Liang, S. Bhattacharyya, W. Xing, and L-Q Chen, Anisotropic Li intercalation in LixFePO4 nanoparticle: a spectral smoothed boundary phase-field model, Physical Chemistry Chemical Physics, 18, 9537, 2016.

Tushar Jogi and Saswata Bhattacharya, Evolution of Interfacial Dislocation Networks in Particle-Strengthened Alloy Systems During High Temperature Creep: A Discrete Dislocation Dynamics Study, Transactions of the Indian Institute of Metals, 69, 507, 2016.

Saswata Bhattacharyya, Soumya Bandyopadhyay and Abhik Choudhury, Phase-Field Modeling of Electrochemical Phenomena, Invited Review Article, Journal of the Indian Institute of Science, 96(3) July-September 2016.

M. Kakunuri, M. Khandelwal, C. S. Sharma, and S.J. Eichhorn, Fabrication of bio-inspired hydrophobic self-assembled electrospun nanofiber based hierarchical structures, Materials Letters, 21 March 2017.

M. Kakunuri, N. D. Wanasekara, C. S. Sharma, M. Khandelwal, and S. J. Eichhorn, Three-dimensional electrospun micropatterned cellulose acetate nanofiber surfaces with tunable wettability, J. Appl. Polym. Sci., 134, 2017.

Funded Research Projects 2016-17

P. P. Bhattacharjee, Challenging the Strength-Ductility Paradox in Materials: Cryo-Mechanical Processing of Nano-Lamellar Eutectic High Entropy Alloys, JICA, 2016-18, Rs. 52.00 Lakhs.

P. P. Bhattacharjee, Development of a Novel AlCoCrFeNi2.1 Eutectic High Entropy Alloy Using Thermo-Mechanical Processing, DST-SERB, 2017-20, Rs. 48.25 Lakhs.

P. P. Bhattacharjee, Development of TRIP (transformation induced plasticity) assisted ultrahigh strength duplex steels by warm-rolling under the IMPRINT initiative, MHRD, Approved, Rs. 78.78 Lakhs.

Suhash Ranjan Dey, Role of Aluminium addition in high strength interstitial free (IFHS) steel, TATA Steel, October 2016, Rs. 33.12 Lakhs.

Suhash Ranjan Dey, Synthesis and characterization of novel Ni-Cu-Graphene thin film libraries using combinatorial approach by electrodeposition. National Post-Doctoral Fellowship Scheme given to Dr. Chokkakula L.P. Pavithra), DST-SERB, June 2016, Rs. 19.2 Lakhs.

Saswata Bhattacharya, Development of Modeling Techniques (Atomistic Monte Carlo and Phase-field simulations) to understand metallurgical phenomena in advanced high strength steels, TATA Steel, November 2016, Rs. 30.00 Lakhs.

Saswata Bhattacharya, Computational Microstructural Design of P/M Disk Superalloys using Phase Field Modeling towards Accelerated Alloy Design, DRDO-DMRL, March 2017, Rs. 34.00 Lakhs.

Saswata Bhattacharya, Accelerated Alloy Design and Processing Optimization Using Computational Thermodynamics and Kinetics – Based Tools, Mishra Dhatu Nigam Limited (MIDHANI), March 2017, Rs. 63.00 Lakhs.

Subhradeep Chatterjee, Design, Manufacturing and Microstructural Analysis of Novel Hard Coatings on Titanium Produced by Weld

Deposition Techniques, DST, 4 November 2016, Rs. 44.04 Lakhs.

Rajesh Korla, Evaluation of Creep Behavior of Alcocrfenimo 0.5 High Strength High Entropy Alloy, ECR-SERB, Approved, Rs. 47.00 Lakhs.

Talks Given in National / International Conferences

Atul Suresh Deshpande, M. Anandkumar, Saswata bhattachrya, and Ranjith Ramadurai, Entropy Stabilized Multicomponent Oxides: Synthesis and Structural Analysis, NMD-ATM 2016, IIT Kanpur, November 2016.

M. Anandkumar, Atul Suresh Deshpande, Saswata Bhattachrya, and Ranjith Ramadurai, Entropy Stabilized Rare-Earth Based Oxide: Synthesis and Thermal Stability, MRS fall meeting, November 2016.

Saswata Bhattacharya and S. Sandeep, Evolution of Compact Morphology in Multicomponent, Multiphase Alloy Systems: A Phase-Field Study, NMD-ATM 2016, IIT Kanpur, November 2016.

Saswata Bhattacharya and Tushar Jogi, Computer Simulations of Microstructural Evolution in Ni-Base Alloy Systems During Creep, NMD-ATM 2016, IIT Kanpur, November 2016.

Bharat B. Panigrahi, MAX Phase Based High Temperature Materials, 4th International Conference on Advances in Materials & Materials Processing, 5-7 November, 2016.

P.P. Bhattacharjee, Annealing Texture of FCC Equiatomic CoCrFeMnNi High Entropy Alloy, 1st International Conference on High Entropy Materials (ICHEM) 2016, NTHU, Hsinchu, Taiwan, 6-9 November 2016.

Rahul B. Mane and Bharat B. Panigrahi, Comparative Study on Sintering Kinetics of As-Milled and Annealed CoCrFeNi High Entropy Alloy Powders, International conference on high entropy materials, Taiwan, 6-9 November 2016.

Irfan S. Wani, Tilak Bhattacharjee, Saad Sheikh, Yiping Lu, Subhradeep Chatterjee, Sheng Guo, Nobuhiro Tsuji, and Pinaki P. Bhattacharjee, Thermo-Mechanical Processing for Enhancing Tensile Properties of A Nano-Lamellar Eutectic AlCoCrFeNi2.1 High Entropy Alloy, NMD-ATM 2016, IIT Kanpur, India, 11-14 November 2016.

Ranjith Ramadurai, M.M. Sajmohan, and B. Mallesham, Manipulating the Domains and Magneto-Electric Coupling in Multiferroic Thin Films, NMD-ATM 2016, 12 November 2016.

Saswata Bhattacharya, Phase-field Modeling of domain dynamics in ferroelectric systems, IUMRS-ICYRAM 2016, Indian Institute of Science, Bangalore, India, December 2016.

P.P. Bhattacharjee, Thermo-mechanical Processing of Single and Multiphase High Entropy Alloys, IIT Hyderabad, India, 8-9 December 2016.

Ronit Ganguly, Vijaya Bhaskar, Kumaraswamy Miriyala, Soumya Bhandyopadhyay, Saswata Bhattacharya, Amit Acharyya and Ranjith Ramadurai, Studies on Tunability of Polarization Components and Electric Field Induced Crystallization in Polyvinylidenefluoride (PVDF); A Piezo Polymer, Compflu 2016, IIIT Hyderabad, 12-14 December 2016.

Sushmita Chaudhari, P. K. Kannan and Suhash R. Dey, Influence of stabilizing agent concentration on synthesis of CZTS thin film, 2nd International Conference on Solar Energy Photovoltaic (ICSEP-2016), KIIT University, Bhubaneswar, India, 17-19 December 2016.

P. K. Kannan, Sushmita Chaudhari and Suhash R. Dey, Synthesis of CZTSSe films with various S/Se ratio using electron beam evaporation, 2nd International Conference on Solar Energy Photovoltaic (ICSEP-2016), KIIT University, Bhubaneswar, India, 17-19 December 2016.

Brijesh Singh Yadav, Suhash R. Dey and Sanjay R. Dhage, Chalcopyrite CIGS absorber layer by inkjet printing for photovoltaic applications, 2nd International Conference on Solar Energy Photovoltaic (ICSEP-2016), KIIT University, Bhubaneswar, India, 17-19 December 2016.

Irfan S. Wani, Tilak Bhattacharjee, Saad Sheikh, Yiping Lu, Subhradeep Chatterjee, Sheng Guo, Nobuhiro Tsuji, and Pinaki P. Bhattacharjee, Thermo-Mechanical Processing of a novel AlCoCrFeNi2.1 Eutectic High Entropy Alloy, ISRS 2016, IIT Madras, India, 21-23 December 2016.

Suhash Ranjan Dey and Alexander von Humboldt Kolleg, Development of β Titanium Alloys for Biomedical Applications, Earth and Material Science for Sustainable Societal Development, Kolkata, West Bengal, India, 13-15 January 2017.

K. Rajamallu, Manish K. Niranjan, Kei Ameyama and Suhash Ranjan Dey, Computational Approach to Develop β Titanium Alloys for Biomedical Applications, Soft/Hard Materials Symposium (Soft/Hard 2017), Ritsumeikan University, Japan, 20-22 January 2017.

P.P. Bhattacharjee, Microstructure and Remarkable Mechanical Properties of a Thermo-Mechanically Processed AlCoCrFeNi2.1 Eutectic High Entropy Alloy, IWHEM 2017, University of Hyderabad, India, 11-12 February 2017.

Rameez R. Tamboli, Manish P. Meshram, Basanth Kumar Kodli and Suhash Ranjan Dey, Microstructure and Texture Analyses of Similar Welded AISI-316L Steel through Friction Stir Welding, International Conference on Texture, Micro-texture and Mechanical Behavior (ICoTMMB 2017), IISc Bangalore, India, 13-15 February 2017.

Ampolu Haribabu, Rahul B. Mane, Bharat B. Panigrahi, Powder Synthesis and Sintering of Ti3GeC2 MAX Phase, International Conference on Powder Metallurgy, New Delhi, 20- 22 February, 2017.

Rahul B. Mane and Bharat B. Panigrahi, Grain Boundary Sliding Assisted Densification During Initial Sintering Stage of Mechanically Alloyed CoFeNi Powders, International Conference on Powder Metallurgy, New Delhi, 20-22 February 2017.

M. M. Sajmohan and Ranjith Ramadurai, Structural Tunability and Domain Orientation Effects on Ferroelectric Polarization and Exchange Bias in BiFeO3 Epitaxial Thin Films, International meeting on highly correlated systems, IMHCS-2017, 24-26 March 2017.

Invited Presentations

Combinatorial Substrate Epitaxy of oxide Thin Films, Dr. Wilfrid Prellier, Director of Research, CNRS laboratory of CRISMAT, Caen, France, 20July 2016.

Can We Design New Engineering Materials?, Prof. Kamanio Chattopadhyay, IISc, Bangalore, 7 November 2016.

Workshops / Symposiums Organised

P.P. Bhattacharjee organized a special session on High Entropy Alloys During the NMD-ATM 2016, IIT Kanpur, India, 11-14 November 2016.

P.P. Bhattacharjee (Convener) and Dr. Subhradeep Chatterjee organized the workshop: Microstructure 2016, IIT Hyderabad, India, 8-9 December 2016.

P.P. Bhattacharjee (as one of the conveners) organized the International Workshop on High Entropy Materials (IWHEM 2017), IWHEM 2017, University of Hyderabad, India, 11-12 February 2017.

Other Events

Ranjith Ramadurai and Bharat B Panigrahi organized TEQIP workshop on Application of X-ray diffraction on Thin films and Bulk, IIT Hyderabad, India, 4-9 July 2016.

Bharat B. Panigrahi organized TEQIP Workshop on Powder Metallurgy and Advanced Composites, IIT Hyderabad, India, 11-16 July 2016.

Suhash Ranjan Dey organized TEQIP Workshop on Equilibrium Phase Transformations of Metallic Systems, IIT Hyderabad, India, 17-23 July 2016.

Suhash Ranjan Dey organized 10 days course of Electron Microscopy: Basics and Applications (under MHRD, GIAN), IIT Hyderabad, India, 18-29 July 2016.

P.P. Bhattacharjee organized a one week course on Dislocation Theory for Mechanical Behavior of Metals by Professor N. Tsuji of Kyoto University, Japan under the GIAN framework, 12-16 December 2016.

Awards / Recognitions

P.P. Bhattacharjee, Invited as a guest editor a special issue of the journal Materials Chemistry and Physics (Elsvier) dedicated to High Entropy Alloys.

P.P. Bhattacharjee, G. Dan Sathiaraj PhD scholar, 2012-16 received the very competitive and prestigious Alexander Von Humboldt Postdoctoral Fellowship for two years (2017-19).

P.P. Bhattacharjee, I.S. Wani, PhD Scholar, 2014 received the Best Paper Award in ISRS 2016 and IWHEM 2017 conferences.

Ranjith Ramadurai, Bandi Mallesham, The Ludo Frevel crystallography scholarship for the year 2016. Mallesham was the only Indian student among the ten international students who received the award for the year 2016.

Saswata Bhattacharya, Tushar Jogi – Best student paper award in 7th International Conference on Creep, Fatigue and Creep-Fatigue Interaction, IGCAR, Kalpakkam, INDIA.

Saswata Bhattacharya, Guest editor for a Special Issue of the Journal of the Indian Institute of Science on 'Phase-Field Methods for Pattern-Formation', 96(3) July-September 2016.

MATHEMATICS

The Department of Mathematics began functioning in the year 2008. The Department is slowly but surely marching towards becoming a world class center for theoretical, applicable and interdisciplinary research.

Besides offering courses at the undergraduate and postgraduate levels for the Engineering students, the Department proposes to commence a new undergraduate program leading to B.Tech (Mathematics and Computing) in Aug 2017. The aim of this programme is to nurture students interested in studying Mathematics, but want to pursue their career in allied fields. The postgraduate program, M.Sc, offered by the Department consists of two streams, viz 'Mathematics' and 'Mathematics and Computing'. A good number of former students have enrolled in the doctoral study in various disciplines of Mathematics both in India and abroad.

In addition to this, the Department offers a doctoral programme. The Department is committed to excellence in Mathematics by establishing research programs for meeting scientific and technological challenges faced by the ever changing, science centered world of the 21st century. The faculty members, being young and dynamic, work in different groups viz. Analysis, Number Theory, Applied and Computing etc, and actively collaborate with their counterparts from the other engineering departments.

Our aim is to produce highly sought after and knowledgeable post-graduates for pursuing careers with academia, industry and government.

D. Sukumar
Ph.D – IIT Madras
Assistant Professor & HoD
Research Areas: Functional Analysis

Tanmoy Paul
Ph.D – ISI Calcutta
Assistant Professor
Research Areas: Functional Analysis

C. S. Sastry
Ph.D – IIT Kanpur
Associate Professor
Research Areas: Wavelets, Sparse representation theory and inverse problems

Venku Naidu
Ph.D – IIT Madras
Assistant Professor
Research Areas: Harmonic Analysis

J. Balasubramanium
Ph.D – Sri Satyasai Institute of Higher Learning
Associate Professor
Research Areas: Connectives in Multivalued Logic, Approximate Reasoning, Some Issues in High Dimensional Data Analysis

Narasimha Kumar
Ph.D – TIFR Bombay
Assistant Professor
Research Areas: Algebraic Number Theory

P. A. L. Narayana
Ph.D – IIT Kharagpur
Associate Professor
Research Areas: Fluid Mechanics

Pradipto Banerjee
Ph.D – University of South Carolina
Assistant Professor
Research Areas: Number Theory

G. Ramesh
Ph.D – IIT Madras
Associate Professor
Research Areas: Functional Analysis/ Operator Theory

Bhakti Bhusan Mannan
PhD – TIFR CAM
Assistant Professor
Research Areas: Partial Differential Equation

Publications
(in peer reviewed journals)

P. Sasmal, R. Naidu, C. S. Sastry and P.V. Jampana, Composition of binary compressed sensing matrices, IEEE Signal Processing Letters, 23, 1096-1100 (2016).

R. Naidu, P.V. Jampana and C. S. Sastry, Deterministic Compressed Sensing matrices: Construction via Euler Squares and Applications, IEEE Transactions on Signal Processing, 64, 3566-3575 (2016).

S. Mandal and B. Jayaram, Monotonicity of SISO Fuzzy Relational Inference with Implicative Rule Base, IEEE Transactions on Fuzzy Systems, 24(6), 1475-1487 (2016).

N. R. Vemuri and B. Jayaram, Lattice of Fuzzy Implications and the Exchange Principle, Fuzzy Sets and Systems, 301, 64-78 (2016).

M. Stepnicka and B. Jayaram, Interpolativity of At-least and At-most models of Monotone Fuzzy rule bases: Multiple Input case, Fuzzy Sets and Systems, 297, 26-45 (2016).

N.R. Vemuri and B. Jayaram, Bijective Transformations of Fuzzy Implications - An Algebraic Perspective, Fuzzy Sets and Systems, 291, 3-17 (2016).

G. Ramesh, Weyl-von Neumann-Berg theorem for quaternionic operators, Journal of Mathematical Physics 57, 043503 (2016).

G. Ramesh and P. Santhosh Kumar, On the polar decomposition of right linear operators in quaternionic Hilbert spaces, Journal of Mathematical Physics 57, 043502 (2016).

D. Sukumar and S. Veeramani, Level sets of the condition spectrum, Annals of Functional Analysis 2017, 10.1215/20088752-0000016X.

S. Kumari and B. Jayaram, Measuring Concentration of Distances - An Effective and Efficient Empirical Index, IEEE Transactions on Knowledge and Data Engineering, 29(2), 373-386 (2017).

N. Deepika, P. A. L. Narayana, and A. A. Hill, Onset of Darcy-Brinkman convection with a uniform internal heat source and vertical throughflow, International Journal of Thermal Sciences, 117, 136-144 (2017).

Anjanna Matta, P. A. L. Narayana, and A. A. Hill, Double-diffusive Hadley-Prats flow in a horizontal porous layer with a concentration based internal heat source, Journal of Mathematical Analysis and Applications, 452 (2), 1005-1018 (2017).

G. Ramesh and P. Santhosh Kumar, Spectral theorem for compact normal operators on Quaternionic Hilbert spaces, The Journal of Analysis, 2017 (2017) 10.1007/s41478-017-0027-8.

G. Ramesh, On the numerical radius of quaternionic normal operator, Advances in Operator Theory, 2(2), 78-86 (2017).

T. Paul, Various Notions of Best Approximations in Spaces of Bochner Integrable Functions, Adv in Operator Theory, 2(1), 59-77(2017).

S. Lalithambigai, T. Paul, P. Shunmugaraj, and V. Thota, Chebyshev Centres and Some Geometric Properties of Banach Spaces, J. Math. Anal. and Appl., 449(1), 926-938 (2017).

P. Partha Sarathi and D. Venku Naidu, Images of Some Subspaces of L^2(R^m) under Grushin and Hermite Semigroup, J. Pseudo-Differ. Oper. Appl. 10.1007/s11868-017-0192-1.

Monica Clapp and Bhakti Bhusan Manna, Double single-layered sign-changing solution to a singularly perturbed elliptic equation concentrating at a single sphere, Communications in partial differential equations, 42(3), 474-490 (2017).

Talks Given in National / International Conferences

D. Sukumar and S. Veeramani, Level Sets of Condition Spectrum, International Workshop on Operator Theory and its Applications (IWOTA-2016), Washington University, St. Loius, Missouri, USA, 18-22 July 2016.

Geethika Sebastian and D. Sukumar, The Open Ball Centered at An Invertible Element of A Banach Algebra, International Workshop on Operator Theory and its Applications (IWOTA-2016), Washington University in St. Louis, Missouri, USA, 18-22 July 2016.

D. Sukumar and S. Veeramani, Level sets of (P, Q) Outer Generalized Pseudo Spectrum, International Conference on Mathematical Analysis and its Applications (ICMAA-2016), Department of Mathematics, IIT Roorkee, 28 November – 2 December 2016.

Geethika Sebastian, The Open Ball Centered at An Invertible Element of A Banach Algebra, International Conference on Mathematical Analysis and its Applications (ICMAA-2016), Department of Mathematics, IIT Roorkee, 28 November – 2 December 2016.

P. Theeda, P. Kumar, C. S. Sastry and P. Jampana, Reconstruction of Sparse-View Tomography Via Banded Matrices, IWCA/ICVGIP, IIT Guwahati, 18-22 December 2016.

P. A. L. Narayana, Numerical Techniques to Solve Eigenvalue Problems Occurring in Stability Of Flows, Short Term Training Programme on Mathematical Modeling and Advanced Numerical Techniques at the Department of Mathematics, National Institute of Technology Warangal, 2-7 December 2016.

Narasimha Kumar, The Gaps Between Non-Zero Fourier Coefficients of Cusp Forms of Higher Weight and Level, Theoretical and Computational Aspects of the Birch and Swinnerton-Dyer Conjecture, ICTS Bangalore, 12-22 December 2016.

P. Sasmal, R. Naidu, C. S. Sastry and P. Jampana, Composition of Binary Compressed Sensing Matrices, 42nd IEEE-ICASSP held in New Orleans, USA, 5-9 March 2017.

D. Sukumar, 4 Lectures on Fourier Series and Analysis: Short Term Program on Complex Analysis, Fourier Analysis and Special Functions, IIT Roorkee, 6-10 March 2017.

Bhakti Bhusan Manna, Concentration Results of Solutions of Some Semilinear Elliptic Problem, Department of Mathematics, IIT Kharagpur, 16 March 2017.

Invited presentations

Completely positive hypergroup actions, Professor Ajit Iqbal Singh, Indian National Science Academy, Delhi, 5 September 2016.

The simple harmonic oscillator, Professor Leach, University of Natal, Durban, 7 February 2017.

Far field boundary conditions and their approximations, Professor Vasudeva Murthy, TIFR CAM, 15 March 2017.

MECHANICAL & AEROSPACE ENGINEERING

The Department of Mechanical & Aerospace Engineering had a very productive year in terms of academics and research. The department graduated 43 BTech, 37 MTech and 2 PhD students. A revised curriculum of 129 credits was introduced at BTech level. This curriculum not only gives a strong foundation in Mechanical Engineering, it also gives flexibility to the students to take a wide range of courses above and beyond the core requirement of Mechanical Engineering. The focus is to produce well rounded engineering graduates who are now equipped to take on the technical opportunities offered by the society.

Faculty and their research groups have been engaged in cutting edge research. Faculty have attracted several new research grants in the last financial year. The department attracted Rs. 250 lakhs to procure high end research equipment under the FIST program of DST to setup. Additionally, the department spent approximate Rs.350 lakhs in augmenting current research facilities through institute funds. Faculty strength continues to grow. Dr Mahesh MS is the newest faculty to join the department. His research interest is in Fluid Structure Interaction, Aero-elasticity and Aero-acoustics.

Raja Banerjee
Ph.D – University of Missouri Rolla - USA
Associate Professor & HOD

Research Areas: High fidelity CFD, Multiphase flow with Heat and Mass Transfer, spray &atomization, Lattice Boltzmann Method

K. Venkatasubbaiah
Ph.D – IIT Kanpur
Associate Professor

Research Areas: Computational Heat Transfer and Hypersonic Flows

V. Eswaran
Ph.D - State University of NY at Stony
Professor

Research Areas: Computational fluid dynamics and heat transfer, Finite volume methods, Turbulence modelling

M. Ramji
Ph.D – IIT Madras
Associate Professor

Research Areas: Composite structures, Fracture Mechanics, Damage Mechanics, Adhesive Bonded Joint

N Venkata Reddy
Ph.D – IIT Kanpur
Professor

Research Areas: Digital Fabrication and Predictive Modelling of Manufacturing Processes

S Suryakumar
Ph.D – IIT Bombay
Associate Professor

Research Areas: Additive Manufacturing, CNC Machining, Manufacturing

Abhay Sharma
Ph.D – IIT Roorke
Associate Professor

Research Areas: Manufacturing Processes, Welding Engineering - arc behavior, wire arc additive manufacturing, and friction stir welding and processing of metallic and non-metallic materials, vibration assisted welding, Sustainable Manufacturing

B. Venkatesham
Ph.D – IISc, Bangalore
Associate Professor

Research Areas: Acoustics & Vibration

Ashok Kumar Pandey
Ph.D – IISc, Bangalore
Associate Professor

Research Areas: Linear and Nonlinear Vibrations, Vehicle Dynamics, MEMS

Gangadharan Raju
Ph.D - IISc, Bangalore
Assistant Professor

Research Areas: Non-destructive testing and Evaluation, Structural Health monitoring, Analysis and design of Composite Structures

Chandrika Prakash Vyasarayani
Ph.D – University of Waterloo, Canada
Associate Professor

Research Areas: Stability, MEMS, Structural dynamics, Delay differential equations

Harish N Dixit
Ph.D – Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore
Assistant Professor

Research Areas: Moving contact lines, drops, thin films, vortex dynamics

Karri Badarinath
Ph.D - National University of Singapore
Assistant Professor
Research Areas: Bubble-dynamics, cavitation, High-speedimaging

Saravanan Balusamy
Ph.D - University of INSA of Rouen, France
Assistant Professor
Research Areas: Combustion, Optical Diagnostics, Fluid Mechanics

Mahesh M. S.
Ph.D – UIUC, USA
Assistant Professor
Research Areas: Computational Mechanics, Aeroacoustics, Aeroelasticity

Syed Nizamuddin Khaderi
Ph.D - University of Groingen, Netherlands
Assistant Professor
Research Areas: Computational solid mechanics, fluid structure interaction

Pankaj Sharadchandra Kolhe
Ph.D - The University of Alabama, USA
Assistant Professor
Research Areas: Spray and Combustion Diagnostics, IC engines, Alternative Fuels

Viswanath R Chinthapenta
Ph.D – Brown University, USA
Assistant Professor
Research Areas: Solid Mechanics

Prashant Saxena
Ph.D - University of Glasgow, Scotland, UK
Assistant Professor
Research Areas: Electromagnetic interactions in solids; Instability analysis; Nonlinear Continuum Mechanics

CHAIR PROFESSOR

V. K. Saraswat
DAE Homi Bhaba Chair
Former Secretary, Dept. of Defence R&D (GoI), Scientific Advisor to Raksha Mantri, Director General of DRDO & ADA

Publications
(in peer reviewed journals)

Sharma Abhay, A comparative study on mechanical properties of single-and twin-wire welded joints through multi-objective meta-heuristic optimization, International Journal of Manufacturing Research 11(4), 374-393 (2016).

P. Mastanaiah, Abhay Sharma, and G. Madhusudhan Reddy, Dissimilar Friction Stir Welds in AA2219-AA5083 Aluminium Alloys: Effect of Process Parameters on Material Inter-Mixing, Defect Formation, and Mechanical Properties, Transactions of the Indian Institute of Metals 69(7), 1397-1415 (2016).

Banerjee, Nilanjan, and Abhay Sharma, Development of a friction model and its application in finite element analysis of minimum quantity lubrication machining of Ti-6Al-4V, Journal of Materials Processing Technology 238, 181-194 (2016).

Angshuman Kapil, Kazuyuki Kohama, Abhay Sharma, Kazuhiro Ito, and Manabu Tanaka, On process–structure–property interconnection in anti-phase synchronised twin-wire GMAW of low carbon steel, Moinuddin Syewd Quidir, Science and Technology of Welding and Joining 21(6) 452-459 (2016).

M. J. Jose, S. Surya Kumar, and Abhay Sharma, Vibration assisted welding processes and their influence on quality of welds, Science and Technology of Welding and Joining 21(4), 243-258 (2016).

SajalSagar Singh, Prem Pal, and Ashok Kumar Pandey, Mass sensitivity of non-uniform microcantilever beam, ASME Journal of Vibration and Acoustics, 138(2), 064502 (2016).

Santhosh Vishwakarma, Ashok Kumar Pandey, Jeevak Parpia, Harold Craighead, and Rudra Pratap, Size modulated transition in the fluid-structure interaction losses in nano mechanical beam resonators, Journal of Applied Physics, 119, 194303 (2016).

SajalSagar Singh, Prem Pal, Ashok Kumar Pandey, and Kazuo Sato, Determination of precise crystallographic directions for mask alignment in wet bulk micromachining for MEMS, Micro and Nano Systems Letters, 4(5), 1-29 (2016).

Jie Ji, Yubo Bi, K. Venkatasubbaiah and Kaiyuan Li, Influence of Aspect Ratio of Tunnel on Smoke Temperature Distribution under Ceiling in Near Field of Fire Source, Applied Thermal Engineering, 106, 1094-1102 (2016).

Sadath, H. N. Dixit, and C. P. Vyasarayani, Dynamics of cross flow heat exchanger tubes with multiple loose supports, ASME Journal of Pressure Vessel Technology, 138(5), 051303 (2016).

Zaid, T. Uchida, and C. P. Vyasarayani, Adaptive sparse Galerkin methods for vibrating continuous structures, Transactions of the Canadian Society of Mechanical Engineering, 40(1), (2016).

Zaid, T. Uchida, A. Subudhi, and C.P. Vyasarayani, Stability of human balance with reflex delays using Galerkin approximations, ASME Journal of Computational and Nonlinear Dynamics, 11(4), 041009 (2016).

R. Lingam, A. Bansal, and N. V. Reddy, Analytical prediction of formed geometry in multi-stage single point incremental forming, International Journal of Material Forming 9(3), 395-404 (2016).

L. Rakesh, S. Amit, and N. V. Reddy, Deflection Compensations for Tool Path to Enhance Accuracy During Double-Sided Incremental Forming, Journal of Manufacturing Science and Engineering 138(9), 091008-1-11 (2016).

R. Lingam, O. Prakash, J. H. Belk, and N. V. Reddy, Automatic feature recognition and tool path strategies for enhancing accuracy in double sided incremental forming, The International Journal of Advanced Manufacturing Technology, 88, 1639-1655 (2017).

R. Banerjee and S. Kumar, Numerical Investigation of Stratified Air/Fuel Mixture Preparation in a GDI Engine, Applied Thermal Engineering, 104, 414-428 (2016).

K. Nageswararao and B. Karri, Fish hook in classifier efficiency curves: An update, Separation and Purification Technology, 158, 31-38 (2016).

Sharma Abhay, Vijendra Bandari, Kazuhiro Ito, Kazuyuki Kohama, M. Ramji, and B. V. Sai Himasekhar, A new process for design and manufacture of tailor-made functionally graded composites through friction stir additive manufacturing, Journal of Manufacturing Processes, 26, 122-130 (2017).

Panaskar, J. Nitin, and Abhay Sharma, Combined Cold Expansion and Friction Stir Processing of Fastener Holes in Aluminum Alloy Al-2014-T6, Transactions of the Indian Institute of Metals 70(1)107-114 (2017).

Prashant N. Kambali, V. S. Nikhil, and Ashok Kumar Pandey, Surface and nonlocal effects of a on response of linear and nonlinear NEMS devices, Applied Mathematical Modeling, 43, 252-267 (2017).

Prashant N. Kambali, Nonlinear coupling of transverse modes of a fixed-fixed microbeam under direct and parametric excitation, Nonlinear Dynamics, 87(2), 1271-1294 (2017).

Rajesh Nimmagadda and K. Venkatasubbaiah, Numerical investigation on conjugate heat transfer performance of micro-channel using sphericity based gold and carbon nanoparticles, Heat Transfer Engineering, 38(1), 87-102 (2017).

P. Patil, C. P. Vyasarayani, and M. Ramji, Linear least squares approach for evaluating crack tip fracture parameters using isochromatic and isoclinic data from digital photoelasticity, Optics and Lasers in Engineering, 93, 182–194 (2017).

S. Surya, R. Gangadharan, and C.P. Vyasarayani, Parametric instabilities of variable angle tow composite laminate under axial compression, Composite Structures, 166, 229–238 (2017).

T. Praveen and V. Eswaran, Transition to asymmetric flow in a symmetric sudden expansion: Hydrodynamics and MHD cases, Computers and Fluids, 148, 103-120 (2017).

R. Reddy and R. Banerjee, Direct simulations of liquid sheet break-up in planar gas blast atomization, Atomization and Sprays, 27, 95-116 (2017).

P. Patil, C. P. Vyasarayani, and M. Ramji, Linear least squares approach for evaluating crack tip fracture parameters using isochromatic and isoclinic data from digital photoelasticity, Optics and Lasers in Engineering, 93, 182-194 (2017).

P. Patil, S. N. Khaderi, and M. Ramji, Numerical estimation of strain intensity factors at the tip of a rigid line inclusion embedded in a finite matrix, Engineering Fracture mechanics, 172, 215-230 (2017).

Surya Samukham, Gangadharan Raju, and C. P. Vyasarayani, Parametric instabilities of variable angle tow composite laminate under axial compression, Composite structures, 166, 229-38 (2017).

S. Ravichandran, Harish N. Dixit, and Rama Govindarajan, Lift-induced vortex dipole collapse, Physical Review Fluids, 2, 034702 (2017).

M. J. Jose, S. Suryakumar, and Abhay Sharma, Vibration assisted welding processes and their influence on quality of welds, Science and Technology of Welding and Joining, 21 (4), 243-258 (2016).

P. Jayaprakash Sharma and S. Suryakumar, Inclined slicing and weld-deposition for additive manufacturing of metallic objects with large overhangs using higher order kinematics, Virtual and Physical Prototyping, 11(2), 99-108 (2016).

J. S. Panchagnula and S. Suryakumar, Feature based Weld-Deposition for Additive Manufacturing of Complex Shapes, Journal of The Institution of Engineers (India): Series C, 1-8 (2016) 10.1007/s40032-016-0339-5.

M. A. Somashekara, M. Naveenkumar, Avinash Kumar, C. Viswanath, and S. Suryakumar, Investigations into effect of weld-deposition pattern on residual stress evolution for metallic additive manufacturing, International Journal of Advanced Manufacturing Technology, 1-17 (2016) 10.1007/s00170-016-9510-7.

Praveena Raviprolu, Nagaraja Jade, and Venkatesham Balide, Sound Radiation Characteristics of a Rectangular Duct with Flexible Walls, Advances in Acoustics and Vibration, 2016, 6053704, 15 (2016) 10.1155/2016/6053704.

A. R. Premlata, M. K. Tripathi, B. Karri, and K. C. Sahu, Dynamics of an air bubble rising in a non-Newtonian liquid in the axisymmetric regime, Journal of Non-Newtonian Fluid Mechanics, 239, 53-61 (2017).

A. R. Premlata, M. K. Tripathi, B. Karri, and K. C. Sahu, Numerical and experimental investigations of an air bubble rising in a Carreau-Yasuda shear-thinning liquid, Physics of Fluids, 29(3), 033103(2017).

M. Agrawal, A. R. Premlata, M. K. Tripathi, B. Karri, and K. C. Sahu, Nonspherical liquid droplet falling in air, Physical Review E, 95(3), 033111 (2017).

P. Saxena, Finite deformations and incremental axisymmetric motions of a magnetoelastic tube, Mathematics and Mechanics of Solids (2017) 10.1177/1081286517697502.

S. N. Khaderi, M. R. J. Scherer, C. E. Hall, U. Steiner, U. Ramamurty, N. A. Fleck, and V. S. Deshpande, The indentation response of Nickel nano double gyroid lattices, Extreme Mechanics Letters, 10, 15 (2017.).

N. A. Fleck, S. N. Khaderi, R. M. McMeeking, and E. Arzt, Cohesive detachment of an elastic pillar from a dissimilar substrate, Journal of the Mechanics and Physics of Solids, 101, 30 (2017).

G. Agawane, V. Jadon, Balide Venkatesham, and R. Banerjee, An Experimental Study of Sloshing Noise in a Partially Filled Rectangular Tank,SAE Int. J. Passenger. Cars - Mech. Syst. 10(2), (2017) 10.4271/2017-01-9678.

S. Balusamy, L. K.B. Li, Z. Han, and S. Hochgreb, Extracting flame describing functions in the presence of self-excited thermoacoustic

oscillations, Proceedings of the Combustion Institute, 36(3), 3851–3861 (2017).

Publications (full paper)

(in peer reviewed conferences)

Matta Seshadri, and M. Ramji, Numerical and experimental analysis of double sided stepped lap repaired CFRP Laminates under tensile loading, First Structural Integrity Conference and Exhibition (SICE-2016), Hotel Le Meridian, Bengaluru, 4-6 July 2016.

Muhammad Shuaib, Naresh Reddy Kolanu, M. Ramji, and Gangadharan Raju, Experimental buckling and post-buckling analysis of CFRP composite panel using digital image correlation technique, First Structural Integrity Conference and Exhibition (SICE - 2016), Hotel Le Meridian, Bengaluru, 4-6 July 2016.

Madhava Yarlagadda, M. Ramji, and Gangadharan Raju, Experimental study on buckling behavior of CFRP stiffened panels involving digital image correlation, First Structural Integrity Conference and Exhibition (SICE-2016), Hotel Le Meridian, Bengaluru, 4-6 July 2016.

Prataprao H. Patil, Syed N. Khaderi, and M. Ramji, Strain intensity factor and interaction of parallel rigid line inclusion in elastic matrix using FEA, First Structural Integrity Conference and Exhibition (SICE-2016), Hotel Le Meridian, Bengaluru, 4-6 July 2016.

Yashdeep Nimje and Gangadharan Raju, Partial delamination detection and quantification in composite laminates using Laser Doppler Vibrometer, First Structural Integrity Conference and Exhibition (SICE-2016), Hotel Le Meridian, Bengaluru, 4-6 July 2016.

Sukanta Das and Gangadharan Raju, Damage growth study in unidirectional CFRP composites using infrared thermography, First Structural Integrity Conference and Exhibition (SICE-2016), Hotel Le Meridian, Bengaluru, 4-6 July 2016.

Abhay Sharma, Jayprakash Sharma, Kauzhiro Ito, Surya S Kumar, Hajime Yamamoto, and Kazuyuki Kohama, Investigation on Cooling Strategies during Wire Arc Additive Layer Manufacturing, Visual-JW 2016, Osaka, 17 -18 October 2016.

Jayaprakash Sharma Panchagnula, Surya Kumar Simhambhatla, Abhay Sharma, Thermal management in manufacture of thin-walled components produced by arc-based additive manufacturing, 10th International Conference on Trends in Welding Research in Tokyo, Japan, 11 -14 October 2016.

Syed Quadir Moinuddin and Abhay Sharma, On Melting Efficiency in Anti-Phase Synchronized Twin-wire Gas Metal Arc Welding, 10th International Conference on Trends in Welding Research in Tokyo, Japan, 11-14 October 2016.

Sajal Sagar Singh, Prem Pal, and Ashok Kumar Pandey, Highly sensitive microelectromechanical mass sensor with nonuniform beams, 13th International workshop on nanomechanical sensing, (2016).

Nikhil Kalkote and Vinayak Eswaran, Supersonic Biplane: cheaper, quite and fuel-efficient supersonic travel, 6th International and 43rd National Conference on Fluid Mechanics and Fluid Power, Allahabad, (2016).

L. Hoskoti and M. S. Mahesh, Explicit time marching coupling schemes for fluid-structure interactions, 6th International Congress on Computational Mechanics and Simulation at IIT Bombay (2016).

D. Aravinth and M. S. Mahesh, Aeroelastic stability of delta wing configuration, 6th International Congress on Computational Mechanics and Simulation at IIT Bombay (2016).

S. Sapkale, M. S. Mahesh, and S. Gupta, Response of an elastic plate with a constrained interior point under the effect of grazing sound, 6th International Congress on Computational Mechanics and Simulation at IIT Bombay (2016).

M. Tripathi, M. S. Mahesh, and Ajay Misra, CFD simulation of cascade fin flow at low subsonic speeds and high angles of attack, 6th International Congress on Computational Mechanics and Simulation at IIT Bombay (2016).

Nagaraja Jade and B. Venkatesham, Application of NAH method for the prediction of sound radiation from a flexible box structure, Proceedings of Inter noise, 2016, Hamburg, 7506-7512.

Veerabhadra Reddy and B. Venkatesham, Prediction of Acoustic Natural Frequencies for two dimensional simplified aircraft cabin by Impedance Mobility and Compact Matrix(IMCM) approach, Proceedings of Inter noise, 2016, Hamburg, 5526-5532.

R. Kale and R. Banerjee, Liquid and Vapour Penetration Length Estimation for GDI Spray of Iso-octane and Alcohols at Elevated Pressure and Temperature Conditions, in ILASS-Asia 2016, 18th Annual Conference on Liquid Atomization and Spray Systems – Asia, Chennai, India, 6-9 November 2016.

H. Sarang, S. Reddy, J. Shashank, and R. Banerjee, High Fidelity Simulations of Binary Collisions of Liquid Drops, in ILASS-Asia 2016, 18th Annual

Conference on Liquid Atomization and Spray Systems – Asia, Chennai, India, 6-9 November 2016.

S. Jaiswal, R. Reddy, R. Banerjee, S. Sato, D. Komagata, M. Ando, and J. Okada, An efficient GPU Parallelization for arbitrary collocated polyhedral finite volume, 2nd HiPC Workshop on Computational Fluid Dynamics, Hyderabad, India, 19 December 2016.

Naresh Reddy Kolanu, L. B. Andraju, M. Ramji, and Gangadharan Raju, Damage assessment of single blade stiffened CFRP Specimen subjected to axial compression Using AE and DIC techniques, Eighth International Symposium on NDT in Aerospace, IISc Bangalore, 3-4 November 2016.

Deepak C. Akiwate and B. Venkatesham, Measurement of Acoustical performance parameters of thin walled narrow tube periodic structures, Proceedings of NSA 2016, Gurgaon, 17-19 November 2016.

Nagaraja Jade, V. Nidheesh, and B. Venkatesham, Reconstruction of Vibration Velocity on a Flexible Rectangular Duct by Using Inverse Numerical Acoustic Technique, Proceedings of NSA 2016, Gurgaon, 17-19 November 2016.

Tapan K. Mahanta, G. Anvesh Kumar, and B. Venkatesham, Vibro-acoustic analysis of automotive horn diaphragm backed by air cavity, Proceedings of NSA 2016, Gurgaon, 17-19 November 2016.

G. Saritha and R. Banerjee, Numerical Study of Bubble Dynamics Using a High Density Pseudopotential Lattice Boltzmann Method, 1st International and 18th National ISME Conference (ISME 18), Warangal, India, 23-25 February 2017.

L. Hosakoti, A. Misra and M. S. Mahesh, Interaction of nonlinear normal modes of a cantilever beam, 24th International Congress on Sound and Vibration, London (2017).

Narendra S. Chaganti, Brian T. Brooker, Semih M. Olcmen, and Pankaj Kolhe, Frequency analysis of oblique shock wave boundary layer interaction, 55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, (AIAA 2017-0988)http://dx.doi.org/10.2514/6.2017-0988.

Surendra Kumar Soni and Pankaj S. Kolhe, High fidelity simulations of binary collisions of dissimilar size drops,Proceedings of National Aerospace Propulsion conference 2017, IIT Kanpur (NAPC-2017-073).

Guguloth Mahesh Nayak, Raju Murugan and Pankaj S. Kolhe, Numerical investigation of laminar and transitional hydrogen gas-jet diffusion flame, Proceedings of National Aerospace Propulsion conference 2017, IIT Kanpur (NAPC-2017-061).

Talks Given in National / International Conferences

Ashok Kumar Pandey, Teaching Beyond the Class, IIT Hyderabad, 1 April 2016.

Ashok Kumar Pandey, Teaching Beyond the Class: Flip Teaching, V.N.R. Vignana Jyothi Institute of Engineering and Technology, Bachupally, Hyderabad, 19 May 2016.

M. Naveenkumar, M. A. Somashekara, S. Suryakumar, and C. Viswanath, Studies on Effect of Area-Filling Pattern on Residual Stress Evolution in Weld-Deposition Based Additive Manufacturing, 2nd International Conference on Progress in Additive Manufacturing (Pro-AM 2016), NTU, Singapore, 16-19 May.

Ashok Kumar Pandey, Mems and Nems in Ground Vehicles, Vardhaman College of Engineering, Shamshabad, Hyderabad, 16 June 2016.

Ashok Kumar Pandey, Engineering Mechanics: Statics, M.V.S.R. Engineering College, Nadergul, Hyderabad, 26 June 2016.

Kale Mohini and Viswanath R. Chinthapenta, Progressive Damage Analysis of Cfrp Composites Using High Fidelity Generalized Method of Cells, Structural Integrity Conference & Exhibition (SICE), Bangalore, 4-6 July 2016.

T. Chaitanya Sagar and Ch. Viswanath, Study of Properties of Materials Using Quantum Chemistry Tool Quantum Espresso: A Case Study on Graphene, Structural Integrity Conference & Exhibition (SICE), Bangalore, 4-6 July 2016.

M. Ramji, Buckling and Post Buckling Analysis of Cfrp Panel Under Uniaxial Compressive Loading, A National Conference on Technological Advancements in Mechanical Engineering, J.N.T.U., Kakinada, 22-23 July 2016.

M. Ramji, Buckling and Post Buckling Analysis of Cfrp Unstiffened and Stiffened Panel Under Uniaxial Compressive Loading, DST-SERB Workshop on Recent Trends in Mechanical Engineering, Anurag Group of Institutions, Hyderabad, 18-20 August 2016.

M. Ramji, Basics of Finite Element Analysis, CEP for Young Scientists, D.R.D.L., Hyderabad, 20 September 2016.

M. Ramji, Buckling Studies of Cfrp Unstiffened and Stiffened Panel Under Uniaxial Compressive Loading, TEQIP Workshop on Computational Dynamics, NIT Surathkal, 26-27 September 2016.

Ashok Kumar Pandey, Modeling of Temperature Effect on Tire Forces and Moments Under Different Operating Conditions, Multibody dynamics simulation organized by PROSIM, Bangalore at IISc Bangalore, 20-21 September 2016.

Jayaprakash Sharma Panchagnula, Surya Kumar Simhambhatla, and Abhay Sharma, Thermal Management in Manufacture of Thin-Walled Components Produced by Arc-Based Additive Manufacturing, 10th International Conference on Trends in Welding Research in Tokyo, Japan, 11-14 October 2016.

Abhay Sharma, Jayprakash Sharma, Kauzhiro Ito, Surya S Kumar, Hajime Yamamoto, and Kazuyuki Kohama, Investigation on Cooling Strategies during Wire Arc Additive Layer Manufacturing, Visual-JW 2016, Osaka, 17-18 October 2016.

Ashok Kumar Pandey, An Overview of MEMS Design, IIT Hyderabad, 23 October 2016.

Ashok Kumar Pandey, MEMS Design and its Application, Sree Vidyanikethan Engineering College, Tirupati, 27 October 2016.

Ashok Kumar Pandey, Design Criteria on Material Selection In Nanosensors, National workshop on Nano Materials for Nano Sensors, V.N.R. Vignana Jyothi Institute of Engineering and Technology, Bachupally, Hyderabad, 10 November 2016.

Ashok Kumar Pandey, Numerical Simulation using MATLAB, Muffakham Jah college of engineering and technology, Tamilnadu, 20 December 2016.

N. V. Reddy, Research at IIT Hyderabad and Collaboration with Japan, Shizuoka University International Symposium 2016-Enhanced Interdisciplinary Domain Research through Partnership with Asian Countries, Hamamatsu, 8-9 December 2016 (Key Note).

K. S. Rahul and Viswanath R. Chinthapenta, Comparative Studies of Microstructural Analysis Using Open Sources Software's: A Case Study on Nickel Based Super Alloys, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

Rajeswar Rao Paturu, Srinivas Kumar, Sandhya R Nair and Viswanath Chintapenta, Smoldering of Incense Stick, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

T. Chaitanya Sagar and Viswanath Chinthapenta, Second Order Elastic Constants of Stanene, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

Sridhar Adibhatla, N.V. Swamy Naidu and Viswanath Chinthapenta, Numerical Investigation of Bone Remodeling, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

Madhu Kiran Karanam and Viswanath R. Chinthapenta, Numerical Simulation of Void Growth in Single Crystal, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

Srimaya Padhi and Viswanath Chinthapenta, Dynamic Fracture Toughness of Composites, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

Gunjan Pahlani, Viswanath Chinthapenta and Ranjith Ramadurai, Fracture Toughness of Barium Titanate Film Bonded to Silicon Substrate, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

Sukanya P. Joshi and Viswanath R Chinthapenta, Mixed Mode Interface Debonding Characterization In Uni-Directional Cfrp Laminates Using Modified Cohesive Length, Indian Society of Theoretical and Applied Mechanics, V.I.T. University, Vellore, Tamilnadu, India, 11–14 December 2016.

Pankaj Pandya and Viswanath R Chinthapenta, Progressive Damage Analysis of Single Fiber Composites, Indian Society of Theoretical and Applied Mechanics, VIT University, Vellore, Tamilnadu, India, 11–14 December 2016.

N. V. Reddy, Metal Forming: Mass Production to Customization, Asia Academy Seminar and India-Japan Symposium on Science and Technology for Sustainability, Tokyo, 15-21 December 2016.

Ashok Kumar Pandey, Design of MEMS and NEMS Sensors and Actuators, NIT Trichy, Tamilnadu, 20 December 2016.

Arpit Agrawal, Prashant Saxena, Investigation of Effect of Anisotropy Direction in A Material Model of Nonlinear Viscoelasticity, Congress of ISTAM, Vellore, December 2016.

M. Ramji, Experimental Buckling and Post Buckling Analysis of Cfrp Unstiffened and Stiffened Panel Under Uniaxial Compressive Loading, Guest Lecture, V.I.T., Vellore Campus, Tamil Nadu, India, 11 January 2017.

M. Ramji, Experimental and Numerical Study of the Stepped Lap Joint in Cfrp Panel, National Workshop on Advanced Composite Materials, C.M.R.I.T., Hyderabad 6 February 2017.

M. Ramji, Material characterization of CFRP laminate, STTP on Nano Micro and Bulk Material Processing and Nanotechnology, GRIET Hyderabad, 24 March 2017.

Gangadharan Raju, Buckling and Post-Buckling Design of Blade Stiffened Composite Panels Under Compression, C.B.I.T., Hyderabad, 24 March 2017.

M. Ramji, Stepped Lap Repair in Cfrp Laminate, Emerging Trends in Composite Materials and Industrial Applications, C.B.I.T. Hyderabad, 25 March 2017.

Ashok Kumar Pandey, Influence of Temperature on the Tire Forces and Moment, Workshop on Advances in Stress Analysis and Dynamics, NIT Karnataka, Suratkal, 17 March 2017.

Ashok Kumar Pandey, Linear and Nonlinear Dynamics of Mems Devices, Gokaraju Rangaraju Institute of Engineering and Technology (GRIET), Bachupally, 23 March 2017.

M. Ramji, Material Characterization of Cfrp Laminate, Advanced Numerical Modeling Techniques for Mechanical Engineering, V.N.R. VJIET Hyderabad, 31 March 2017.

Gangadharan Raju, Experimental and Numerical Studies on Buckling and Post-Buckling Design of Stiffened Composite Panels, V.N.R. V.J.I.E.T. Hyderabad, 31 March 2017.

Funded Research Projects 2016-17

M Ramji, Fatigue Life Assessment of Upgraded MiG-29 Landing Gears, 11 BRD, Indian Air Force, April 2016, Rs. 33.00 Lakhs.

B Venkatesham, Development of Low Frequency Noise Control Sheet Absorber: A Biomimetic Solution, DST-TSDP, April 2016, Rs. 80.8 Lakhs.

Sarvanan Balusamy, Experimental Studies on Swirl-Stabilized Turbulent Premixed and Stratified Dimethyl Ether/Air Flames using Laser Diagnostic Techniques, SERB, 1 June 2016, 42.98.

Pankaj S Kolhe, Novel Flow Blurring Injector Characterization Using Point and Planar Optical Diagnostic Techniques, SERB-DST, 6 June 2016, Rs. 40.81 Lakhs.

Karrii Badarinath, Experimental Studies in Bubble Dynamics - Rising Bubble Dynamics and Characterization of Sprays From Bubble Induced Impinging Jets, DST, 14 June 2016, Rs. 35.26 Lakhs.

Mahesh M.S., Numerical Simulation of Penetration Characteristics of Preformed Fragments, Armament Research Board, June 2016, Rs. 17.71 Lakhs.

N Venkata Reddy, Development of Electric Pulse Aided Bending and Roll Forming Processes, UAY Project, MHRD, DHI and TATA STEEL, October 2016, Rs. 100.00 Lakhs.

N Venkata Reddy, Development and Validation of Predictive Models for Forming of Large Components using Double Sided Incremental Forming and Studies on Difficult to Form Materials using Hybrid Approaches, SERB DST, September 2016, Rs. 75.00 Lakhs.

Ashok K Pandey, Static and Dynamic Characteristics of Bolted Structure, AR&DB, 5 December 2016, Rs. 14.99 Lakhs.

Viswanath R Chinthapenta, Void growth modeling in BCC steels using CPFEM, ECR, 29 March 2017, Rs. 28.25 Lakhs.

Syed Nizamuddin Khaderi, Numerical Analysis of Blast Loading due to Explosions in Sand, ECR

Syed Nizamuddin Khaderi, High Strain Rate and High Temperature Material Characterization Lab Establishment, Industrial.

Workshops / Symposiums Organised

Dr. Prashant Saxena organized First Solid Mechanics Symposium at IITH, Talks were given by 10 faculty members of IIT Hyderabad on a range of research topics related to smart materials, composites, concrete and phase field modelling, 24 September 2016.

The 10th edition of the Complex Fluids symposium, CompFlu, was organized at Hyderabad in December 2016 under the aegis of Indian Society of Rheology. The meeting was jointly organized by four major research institutions in Hyderabad: IIT Hyderabad, TIFR Centre for Interdisciplinary Sciences, University of Hyderabad and International Institute of Information Technology and was held at IIIT Hyderabad. Dr Harish N Dixit was one of the organizer of the symposium.

Other Events

Syed Nizamuddin Khaderiwas conducted TEQIP course on finite element analysis, 13-18 June 2016.

Ashok Kumar Pandey, Chandra Sekhar Sharma, Prem Pal, Siva Vanjari and Shiv Govind Singh were organized TEQIP workshop on MEMS and NEMS (Design and Fabrication)at IIT Hyderabad, 21-26 October 2016.

Gangadharan Raju was conducted TEQIP course onfinite element analysis with application to composite structures, 13-18 March 2017.

Pankaj Sharadchandra Kolhe was conducted TEQIP workshop on Internal Combustion Engines: Theory, Modeling and Diagnostics, 20-24March 2017.

Awards / Recognitions

AngshumanKapil, Associate Engineers Award-2016 for best M.Tech thesis (Supervisor: Dr. Abhay Sharma) by Indian Institute of Welding. December 2016.

Angshuman Kapil, Associate Engineers Award-2016 for best M.Tech thesis by Indian Institute of Welding. December 2016.

Ms Kale Mohini, MTech (2014-16) - 3rd Best Poster Award for paper on Progressive damage analysis of CFRP composites using high fidelity generalized method of cells, Structural Integrity Conference & Exhibition (SICE), Bangalore, 4-6 July 2016.

PHYSICS

The department of physics had success at academic as well as research fronts during the FY 16-17. Department has been successfully mentoring IIT Bhilai. In academics, 1st batch of B. Tech in Engineering Physics graduated with strength of 6 students. Apart from that, department also graduated 17 M.Sc and 1 PhD students. A dedicated optics teaching laboratory has been developed for third year engineering physics students.

In research, during last financial year, department received infrastructural grant from FIST – DST, worth 200 lakhs. In addition, faculties have been successful in bringing sponsored projects from external agencies such as DST, DSIR, DAE and CSIR. During the last year, faculty of the department have published nearly 47 international journals and also conducted some workshop/conferences. One of the physics faculty also received prestigious Ramanujan fellowship.

Anjan Kumar Giri
Ph.D – Utkal University

Professor & HoD

Research Areas: Flavour Physics & CP violation, Neutrino Physics

Suryanarayana Jammalamadaka
Ph.D – IIT Madras

Associate Professor

Research Areas: Magnetic materials, spintronics, mesoscopic physics, thinfilms / device physics, magnetic nanoparticles, Graphene, magnetostrictive sensors, photovoltaics, non volatile memory

Prem Pal
Ph.D – IIT Delhi

Associate Professor

Research Areas: MEMS, Silicon Micromachining, Thin film for MEMS, Wet anisotropic etching

Vandana Sharma
Ph.D – PRL, Ahmedabad

Assistant Professor

Research Areas: Ultrafast atomic and molecular dynamics, Particle X-ray Generation, Nanoparticle beam Generation, Table top light source Generation

Saket Asthana
Ph.D – IIT Bombay

Associate Professor

Research Areas: Functional Oxide Materials, Piezoluminescence, Magneto-luminescence

Jyoti Ranjan Mohanty
Ph.D – Humboldt University, Germany

Assistant Professor

Research Areas: Nanomagnetism, Perpendicular magnetic anisotropy material, Exchange Bias, micromagnetics, Ultrafast magnetism, Magnetic nanostructure, High resolution magnetic imaging, Magnetic sensor

Venkatakrishnan Kanchana
Ph.D – Anna University

Associate Professor

Research Areas: Exploring thermoelectric materials, Scintillators, Magnetism in solids, Superconductivity, Elastic and mechanical properties of Solids, Materials under extreme conditions.

Raghavendra Srikanth Hundi
Ph.D – Harish Chandra Research Institute

Assistant Professor

Research Areas: Physics beyond standard model, Neutrino masses

Manish K. Niranjan
Ph.D – University of Texas at Austin, USA

Associate Professor

Research Areas: Theoretical condensed matter Physics, Electronic Structure, Surface and interface Physics, Quantum Transport

Raavi Sai Santosh Kumar
Ph.D – University of Hyderabad

Assistant Professor

Research Areas: Optical spectroscopy of Energy harvesting materials

Shantanu Desai
Ph.D – Boston University, USA

Associate Professor

Research Areas: Particle Astrophysics, Cosmology, Astrostatistics

Bhuvanesh Ramakrishna
Ph.D – The Queens University of Belfast, UK

Assistant Professor

Research Areas: Laser plasma

Narendra Sahu
Ph.D – IIT Bombay

Associate Professor

Research Areas: Dark matter phenomenology, Neutrino mass, Baryon asymmetry of the Universe

Anurag Tripathi
Ph.D - Harish Chandra Research Institute,

Assistant Professor

Research Areas: High Energy Physics, Perturbative Quantum Chromodynamics, Infrared Structure of Gauge Field Theories

Shubho Ranjan Roy
Ph.D – Brown University, USA

Assistant Professor

Research Areas: String Theory, Classical and Quantum Gravity,Quantum Field Theory

Priyotosh Bandyopadhyay
Ph.D – Harish-chandra Research Institute, Allahabad

Assistant Professor

Research Areas: Physics at the LHC, Higgs physics, Supersymmetry, Neutrinos and dark matter

Arabinda Haldar
Ph.D – IIT Bombay

Assistant Professor

Research Areas: Magnonspintronics, Nanomagnetic devices, Imaging spin waves at the nanoscale using Brillouin light scattering spectro-microscopy, Ferromagnetic resonance, Thin film nanofabrication (Lithography), Functional magnetic materials.

Publications
(in peer reviewed journals)

P. Adamson, A. Giri, et al., First measurement of electron neutrino appearance in NOvA, Phys. Rev. Lett., 116, (2016), 151806.

S. Sahoo, R. Mohanta and A. Giri, Explaining the RK and RD(*) anomalies with vector leptoquarks, Phys. Rev. D., 95, (2017), 035027.

S. S. Singh, Prem Pal, A. K. Pandey, Y. Xing, K. Sato Determination of precise crystallographic directions for mask alignment in wet bulk micromachining for MEMS: A Review, Micro and Nano Systems Letters, 4, 2016, pp.1-29.

S. S. Singh, Prem Pal, and A. K. Pandey Mass sensitivity of non-uniform microcantilever beams, Journal of Vibration and Acoustics, 138, 2016, pp. 064502.

M. A. Gosalvez, Y. Li, N. Ferrando, Prem Pal, K. Sato, Y. Xing Fluctuations during anisotropic etching: Local recalibration and application to Si{110}, IEEE Journal of Microelectromechanical Systems, 25, 2016, pp. 788-798.

Ashok and Prem Pal Silicon micromachining in 25 wt% TMAH without and with surfactant concentrations ranging from ppb to ppm, Microsystem Technologies, 23, 2017, pp. 47-54.

Subir Roy, Rajlaxmi Maharana, S. Rangaswamy, Sarabjit Singh, Pawan Kumar, T. Karthik, Saket Asthana, Structural, ferroelectric and piezoelectric properties of chemically processed, low temperature sintered piezoelectric BZT-BCT ceramics, , V.V. Bhanu Prasad, Samir Kamat, Mater. Res. Express. 3 (2016) 035702.

Sudarshan Vadnala, Prem Pal, Saket Asthana, Investigation of near room temperature magnetocaloric, magnetoresistance and bolometric properties of Nd0.5La0.2Sr0.3MnO3: Ag2O manganites, J Mater Sci: Mater Electron. 27 (2016) 6156.

Ganga Prasad K, Manish K. Niranjan, Saket Asthana, R. Karthikeyan, Raman modes and Born-effective charges in AgNb1/2Ta1/2O3: A density-functional and Raman scattering study", J. Am.Ceram. Soc. 99 (2016) 332.

P. V. Sreenivasa Reddy, V Kanchana, TE Millichamp, G Vaitheeswaran, SB Dugdale, Enhanced superconductivity in the high pressure phase of SnAs studied from first principles, Physica B: Condensed Matter 505, (2017), 33-40.

Sreeparvathy P. C., V. Kanchana, G. Vaitheeswaran, and N. E. Christensen, ZnGeSb2: A promising thermoelectric material with tunable ultra-high conductivity, Phys. Chem. Chem. Phys, 18, (2016), 26275-26283.

Anoop K. Chandran, Vijay Kumar Gudelli, Sreeparvathy P. C. and V. Kanchana, Structural and thermoelectric properties of Zintl-phase CaLiPn (Pn=As, Sb, Bi), J. Sold State Chemistry, 243, (2016), 198-206.

G. Vaitheeswaran, V. Kanchana, Xinxin Zhang, Y. Ma, A. Svane and N. E. Christensen Calculated high-pressure structural properties, lattice dynamics and quasi particle band structures of perovskite fluorides KZnF3, CsCaF3 and BaLiF3, J. Phys. Condens. Matter 28, (2016) 315403.

S. Lavoie et al (XXL Collaboration includes S. Desai), The XXL survey XV: Evidence for dry merger driven BCG growth inXXL-100-GC X-ray clusters, MNRAS 462 (2016) 414L.

A. Pieres et al, (The DES Collaboration, includes S. Desai), A stellar overdensity associated with the Small Magellanic Cloud, MNRAS, 468, 2017, 1349.

E. Luque, et al, (The DES Collaboration, includes S. Desai), The Dark Energy Survey view of the Sagittarius stream: discovery of two faint stellar system candidates, MNRAS 468, 2017, 97.

J. Etherington, et al, (The DES Collaboration, includes S. Desai), Environmental dependence of the galaxy stellar mass function in the Dark Energy Survey Science Verification Data, MNRAS, 466, 2017, 228.

H. Lin, et al, (The DES Collaboration, includes S. Desai), Discovery of the Lensed Quasar System DES J0408-5354, ApJ, 838, 2017, 15L.

S. Kulkarni and S. Desai, Classification of gamma-ray burst durations using robust model- comparison techniques, AP & SS, 362, 2017, 70.

T. T. Hansen et al, (The DES Collaboration, includes S. Desai), An r-process Enhanced Star in the Dwarf Galaxy Tucana III, ApJ, 838, 2017, 44.

J. D Simon et al, (The DES Collaboration, includes S. Desai), Nearest Neighbor: The Low-mass Milky Way Satellite Tucana III, ApJ, 838, 2017, 11S.

T.S. Li et al, (The DES Collaboration, includes S. Desai), Farthest Neighbor: The Distant Milky Way Satellite Eridanus II, ApJ, 838, 2017, 8L.

Z. Doctor et al, (The DES Collaboration, includes S. Desai), A search for kilonovae in the Dark Energy Survey, ApJ, 837, 2017, 57.

S.S. Tie et al, (The DES Collaboration, includes S. Desai), A study of quasar selection in the Supernova Fields of the Dark Energy Survey, AJ, 153, 2017, 107.

S. Bethapudi and S. Desai, Median Statistics Estimates of Hubble and Newton's Constants, EPJP, 132, 2017, 78.

M. Bayliss et al, (The SPT Collaboration, includes S. Desai), SPT-GMOS: A Gemini/GMOS-South Spectroscopic Survey of Galaxy Clusters in the SPT-SZ Survey, ApJ, 227, 2016, 3.

Zenteno,J. Mohr, S. Desai et al, Galaxy populations in the 26 most massive galaxy clusters in the South Pole Telescope SPT-SZ survey, MNRAS, 462, 2016, 830.

S. Desai, Frequentist model comparison tests of sinusoidal variations in measurements of Newton's gravitational constant, EPL, 115, 2016, 20006.

Sudhanwa Patra, Soumya Rao, NirakarSahoo and Narendra Sahu, "Gauged $U(1)_{L_\mu - L_\tau}$ model in light of muon g-2 anomaly, neutrino mass and dark matter phenomenology", Nucl. Phys. B, 917, 2017, 317-336.

Subhaditya Bhattacharya, Nirakar Sahoo and Narendra Sahu, "Minimal vector-like leptonic dark matter and the signatures at the LHC", Phys. ReV. D, 93, 2016, 115040.

Subhaditya Bhattacharya, Biswajit Karmakar, Narendra Sahu and ArunansuSil, "Unifying the flavor origin of dark matter with leptonic non-zero θ_B ", Phys. ReV. D, 93, 2016, 115041.

Subhditya Bhattacharya, Sudhanwa Patra, Nirakar Sahoo, Narendra Sahu, "750 GeV Di-photon excess at CERN LHC from a Dark Sector Assisted Scalar Decay", JCAP, 06, 2016, 010.

Frank F. Deppisch, Lukas Graf, Suchita Kulkarni, Sudhanwa Patra, Werner Rodejohann, Narendra Sahu, Utpal Sarkar, "Reconciling the 2 TeV excesses at the LHC in a linear seesaw left-right model", Phys. ReV.D, 93 , 2016, 013011.

Ganesh Kotnana. V. Raghavendra Reddy and S. Narayana Jammalamadaka, Magnetic and Hyperfine interactions in HoFe1-xCrxO3 compounds, Journal of Magnetism and Magnetic Materials, 429, (2017)353.

U. M. Kannan, M. Venkat Narayana, Ganesh Kotnana, L. Giribabu, Surya Prakash Singh and S. Narayana Jammalamadaka, Spin - orbit coupling and Lorentz force enhanced efficiency of TiO2 based dye sensitized solar cells" Phys. Status Solidi A, (2017)1600691.

M. Venkat Narayana, S. S. Rao and S. Narayana Jammalamadaka, Influence of negative field cooling on exchange bias properties of potassium split GNRs, Journal of Materials Science and Engineering A 6 (9-10) (2016) 254-259

R Gopal, R. Kumar, M. Anand, A. Kulkarni, D. P. Singh, S. R. Krishnan, V. Sharma, and M. Krishnamurthy, A source to deliver mesoscopic particles for laser plasma studies, Rev. Sci. Instruments, 88, 2017, 023301.

V S S Praneeth Varma G, Rayapati Sushma, Vandana Sharma, Abhinav Kumar, and G V V Sharma, Power Allocation for Uniform Illumination with Stochastic LED Arrays, Optics Express, 25, 2017, 8459.

A, Talapatra, J. Mohanty, Laser induced local modification of magnetic domain in Co/Pt multilayer, Journal of Magnetism and Magnetic Materials, 418, 2016, 224.

Talapatra, J. Mohanty, Role of patterning induced defects on the switching field in magnetic nanostructure, Applied Physics A, 122, 2016, 807.

M. Gauthier, J. B. Kim, C. B. Curry, B. Aurand, A. Pak, A. Propp, J. Ruby, O. Willi, G. J. Williams, C. Rödel, S. H. Glenzer and B. Ramakrishna, High-intensity laser-accelerated ion beam produced from cryogenic micro-jet target, Review of Scientific Instruments 87, 2016, 11D827.

Kakolee, K.F., Ramakrishna B, Borghesi, M., Zepf, M. et al., Scaling of ion spectral peaks in the hybrid RPA-TNSA region Journal of the Korean Physical Society (2016) 68: 768.

Sergey Alekhin et. al., A facility to Search for Hidden Particles at the CERN SPS: the ShiP physics case, Reports on Progress in Physics, 79, 2016, 124201.

PriyotoshBandyopadhyay, Claudio Corianò, Antonio Costantini General analysis of the charged Higgs sector of the Y=OY=O triplet-singlet extension of the MSSM at the LHC, Phys.Rev. D94 (2016) no.5, 055030.

Priyotosh Bandyopadhyay, Claudio Coriano, Antonio Costantini, Luigi Delle Rose, Bounds on the Conformal Scale of a Minimally Coupled Dilaton and Multi-Leptonic Signatures at the LHC, JHEP 1609 (2016) 084.

Priyotosh Bandyopadhyay, Rusa Mandal, Vacuum stability in an extended standard model with a leptoquark, Phys.Rev. D95 (2017) no.3, 035007.

Publications

(in peer reviewed conferences)

A. Giri, R. Mohanta and S. Sahoo, Implications of lepton nonuniversality in the beauty sector, J. Phys. Conf. Ser., 770 (2016), 012031 (DOI: 10.1088/1742-6596/770/1/012031)

K. Gangaprasad, Manish K. Niranjan, and Saket Asthana, The Structural And Electronic Properties Of Cubic AgMO3(M=Nb, Ta) By First Principles Calculations", AIP Conf. Proc.1728 (2016) 020102.

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Soundararaj, J. Mohanty, Magnetic property of electrodeposited nano-crystalline CoFe thin films, AIP Conference Proceedings, 1731, 2016, 080060.

Talapata, J. Mohanty, Magnetic domain and domain wall in Co/Pt multilayer, AIP Conference Proceedings, 1731, 2016, 130027

Priyotosh Bandyopadhyay, Claudio Coriano Antonio Costantini Higgs bosons: discovered and hidden, in extended Supersymmetric Standard Models at the LHC, PoS CORFU2015 (2016) 069.

Priyotosh Bandyopadhyay, Charged Higgs bosons in the extended supersymmetric scenario at the LHC, PoS LHCP2016 (2016) 080.

Priyotosh Bandyopadhyay, Extended Higgs sectors in the context of supersymmetry at the LHC, EPJ Web Conf. 129 (2016) 00009.

Funded Research Projects 2016-17

Vandana Sharma Isomerization followed by fragmentation in He and Ne nanodroplets, ICTP-DST, 68000 Euros, 23rd Feb 2017.

Vandana Sharma, Designing and fabrication of an aerodynamic lens for nanoparticles of variable size, DSIR Rs. 5120160/-, 1st Feb 2017.

Vandana Sharma, esigning and fabrication of Laser Phasemeter, DAE-BRNS, Rs 35,00,000/-, 1st March 2017.

Sai Santosh Raavi, Photoluminescence studies on rare-earth modified lead-free ferroelectric ceramics, CSIR, Rs. 20,60,000/-, 1/6/2016.

Talks Given in National / International Conferences

A. Giri, Implications of lepton nonuniversality in the beauty sector, Beauty 2016, Fairfax, VA, USA, June 2016.

Prem Pal, Design and Fabrication of RF- and Bio-MEMS Components Using Micromachining Technology, National Workshop on National Workshop on RF and Bio-MEMS, KL University, Vaddeswaram, AP, 30-31 March, 2017.

Prem Pal, Fabrication of Silicon Based MEMS/NEMS, Short Term Training Programme on "Nano, Micro and Bulk Material Processing and Nanotechnology" (STTP), Gokaraju Rangaraju Institute of Engineering and Technology (GREIT) Hyderabad, Telangana, 20-26 March 2017.

Prem Pal, Silicon MEMS Design and Fabrication, One-week workshop on "MEMS Design and its Applications" from Oct. 24-28, 2016, SreeVidyanikethan Engineering College Tirupati.

Prem Pal, MEMS based components for low power energy harvesting, Seminar on Renewable Source of Energy (RSE-2016), Manipal University Jaipur, India, June 8, 2016.

Raavi, S S K and Asthana, S,Novel Strategies to improve physical properties in Eco-friendly energy harvesting smart materials for IoT, (2016). In: SANKEN International Nanotechnology Symposium on "Molecular Technology Frontiers towards IoT world", 12, December 2016, Osaka, Japan.

Kumara Raja Kandula,Sai Santosh KumarRaavi,Saket Asthana, Enhancement in electrical and optical properties by substitution of lanthanides in lead free NaO.5BiO.5TiO3 ceramic,International Conference on Technologically Advanced Materials and Asian Meeting on Ferroelectricity (ICTAM-AMF10), 7th-11th Nov. 2016, at University of Delhi, Delhi, India

Saket Asthana, Strategies to improve physical properties in Eco-friendly materials, International Conference on New Scintillations on Materials Horizon (ICNSMH-2016),21st -23rd Oct 2016 at MJP Rohilkhand University, Bareilly, India.

Saket Asthana, Strategies to improve physical properties in Eco-friendly materials through cation engineering, National Seminar (UGC- Autonomy Grant) on Applications of Nanomaterials in Energy and Environment17 -18 August 2016 at A.S.D.Govt. Degree College For Women (A) Kakinada, AP, India.

V. Kanchana, "Promising thermoelectric materials", Current Trends in Computational Natural Sciences, at IIIT Hyderabad on March 5 2017.

V. Kanchana, "First principles study on Zr2TiAl and Mn-based Magnetic compounds under compression", International Conference on Magnetic Materials and Applications (ICMAGMA) , Hyderabad , during 1st -3 rd February, 2017.

V. Kanchana, "ZnGeSb2 : A promising thermoelectric material with tunable ultra high

conductivity", the national conference of electron spectroscopy (NCES) at Toshali Sands. Puri, Odisha during 22nd -22th December 2016.

V. Kanchana, "Natural Bulk-Superlattice Thermoelectric Materials: An Ab-initio Study", the international conference of young researches on advanced materials, IUMRS-ICYRAM, at Indian Institute of Science Bangalore, during 11th-15th December 2016.

Shantanu Desai, "Optical Follow-up of Sunyaev-Zeldovich clusters from SPT and Planck" Indo-US Bilateral workshop on "Understanding the Origin of the Invisible Sector: From Neutrinos to Dark Matter and Dark Energy", School of Physics, University of Hyderabad, Nov 16-18, 2016.

Narendra Sahu, " Three lectures on dark matter", winter school in High Energy Physics, school of Physics University of Hyderabad, 6th-11th March 2017.

Narendra Sahu, "Mixed fermion dark matter, neutrino mass and collider signatures" Looking for Beyond SM physics, CHEP, IISc Bangalore , 20th – 22nd December 2016.

Narendra Sahu, "Mixed dark matter and detection perspective", Indo-US workshop "The Invisible sector", School of Physics University of Hyderabad, 16th–18th November 2016.

Narendra Sahu, "Vector-like leptonic dark matter and its signature at LHC", "TeV Particle Astrophysics 2016", CERN, Switzerland, 12th–16th September 2016.

Narendra Sahu, "Vector-like leptonic dark matter and its signature at LHC", "Frontiers in High energy physics 2016", IMSc. Chennai, 22nd – 25th March 2016.

Narendra Sahu, "Dark matter: From cosmos to collider", "Advances in astroparticle Physics", School of Physics, Sambalpur University, Odissa, 19th -20th Feb. 2016.

S. Narayana Jammalamadaka, Talk delivered on "Conductance switching and tunneling characteristics of remotely controlled magnetostriction-based nanocontacts" at ICMAGMA 2017, on 1st Feb 2017.

S. Narayana Jammalamadaka, Invited talk delivered on "Magnetostrictivenanocontacts - NEMS applications" at Nano, Micro and Bulk Material Processing and Nanotechnology conference, GRIET, Hyderabad on 24th March 2017.

J. Mohanty, Ultrafast dynamics in nanoscale magnetic system: X-ray and X-FEL study, International workshop on advanced generation of THz and Compton X-rays, AGTaX, IUAC, Delhi, March 06-07, 2017.

J. Mohanty, Nanoscale magnetism: Nano-small meets ultra-fast, International conference on nanostructured materials and nanocomposites, ICNM 2017, Kottayam, Kerala, Feb 10-12, 2017.

B. Ramakrishna, "Laser Driven Ion Acceleration", Invited talk in National Photonics Symposium 27-29, Feb. 2017.

B. Ramakrishna, "Laser Driven Ion Acceleration", Invited talk at APS Physics meeting 1st-4thNov 2016.

B. Ramakrishna, "Laser Driven Ion Acceleration", Invited talkat Stanford University2nd Nov 2016.

Anurag Tripathi, Next to leading order calculations in QCD, Collider Physics: Events, Analysis and QCD, Guwahati 27-31 March 2017.

Shubho R. Roy, "Computational Complexity and Cosmological Singularities"-on Feb 21, 2017 at the International Workshop on String Theory and Related Topics held at IIT Kanpur from Feb 20 to 23, 2017 ("Strings Attached").

Shubho R. Roy"Local bulk operators in AdS-CFT", Journal Club talk at String Theory group at IOP, Bhubaneswar, July 13, 2016.

Shubho R. Roy"Computational Complexity and Cosmological Singularities ", High Energy Physics Seminar at IOP, Bhubaneswar, July 12, 2016.

A. Haldar, "Reconfigurable micro-conduits for channeling and gating of spin waves", International conference on Magnetic Materials and Applications (ICMAGMA), Feb 1-3, 2017, Hyderabad, India.

Workshops / Symposiums Organised

Prem Pal, Six days TEQIP Workshop on MEMS and NEMS (Design & Fabrication), Oct. 21-26, 2016, Indian Institute of Technology Hyderabad.

S. Narayana Jammalamadaka, Organizing member, International conference on magnetic materials and applications (2017) jointly organized by Defence Metallurgical Research Laboratory (DMRL), Hyderabad and Magnetics Society of India (MSI) during February 1-3, 2017 at Hyderabad, India.

Sai Santosh Raavi, Co-Convenor for National Conference on Recent Advances in Optical Sciences-II (RAOS-2016), University of Hyderabad, Hyderabad, May 6-7, 2016.

Quantitative Measurement of Graphene Physical Properties by SPM, Dr. Yogesh Jeyaram, Bruker

Nanosurface Division, Bangalore, 01-06-2016.

SNO+ and the search for Neutrinoless Double Beta Decay, Dr. Kalpana Singh, U. Alberta, Edmonton, 04-07-2016.

Dark energy and its effects on black holes and other cosmic structures, Dr. Sourav Bhattacharya, IUCAA, 11-July-2016.

NPN Punchthrough Diode Selector for Crosspoint Memory Applications, Dr. V. S. Senthil Srinivasan, University of Stuttgart, Germany, 15-07-2016.

Investigating Statistical Mechanics problems via Molecular Simulations: Two Case Studies. (i) Thermodynamics of Buettiker-Landauer Brownian Motor, (ii)Solid-Liquid Phase Transition, Dr. Ronald Benjamin, University of Duesseldorf Germany, 21-07-2016.

Cosmological Inflation and Primordial Magnetic Fields, Dr. Rajeev Kumar Jain, University of Southern Denmark, 24-08-2016.

Ultrafast studies in two dimensional (2D) materials, Dr. BalaMurali Krishna Mariserla, Okinawa Institute of Science and Technology, Japan, 21-12-2016.

Circularly Polarized Light from Magnetized Current Filaments, DrUjjwal Sinha, GoLP/IPFN, Instituto Superior Tecnico, Lisbon, Portugal, 13-01-2017.

Stochastic Thermodynamics, Fluctuation Theorems and optimal protocols, Dr Sourabh Lahiri, International Centre for Theoretical Sciences, TIFR, Bangalore, 15-03-2017.

Dynamical scaling in triple-well model Landau free energy, Dr N. Shankaraiah, TIFR Centre for Interdisciplinary Sciences, TIFR-Hyderabad, 22-03-2017.

Amorphous Materials with Magnetic Degrees of Freedom, Dr. Bhaskar Sen Gupta, Max Planck Institute for Polymer Research, Mainz , Germany, 24-03-2017.

Artificial atoms interacting with photons and phonons, Dr. Baladitya Suri, Chalmers University of Technology, Gothenburg, Sweden, 23 – 11 – 2016.

Other Events

Prem Pal, Six days TEQIP Workshop on MEMS and NEMS (Design & Fabrication), Oct. 21-26, 2016, Indian Institute of Technology Hyderabad.

Awards / Recognitions

Raavi Sai Santosh Kumar - Travel grant from IITH-JICA friendship program to visit Japan during December 5-17, 2016.

Ramanujan Fellowship by Dr. Arabinda Haldar.

Elan

The 8th edition of Elan, the cultural festival of IITH and 5th edition of nVision, the technical festival of IITH was conducted on a grand scale from 20-22 January. This year Elan and nVision were complementarily themed as 'Medieval Rampage' and 'The Future Tech' respectively. In addition to the spectacular cultural programs, a program for cultural awareness and career guidance for the students of ZPHS school and cloth donation by the NSS team of IITH were also organized. This year's program had a spectra of events such as Manthan (fusion competition), Nitranjali, Walk the ramp (auditions for Femina Miss India beauty pageant), Vibrazione, Octave, RoboQuidditch, Robo soccer, and quizzing. The highlight of the cultural show was the Pro-nite and EDM nite with Benny Dayal and Nikhil Chinapa.

All India Off Road Designing and Racing Competition (BAJA)

A team of students from IIT Hyderabad has participated in the competition for the past 3 years. The team works round the year in designing and building their race car. The car is then self-fabricated by students, with critical inputs from faculty members of MAE and team alumni who still support the team in one way or other. The team has been performing well every year, and has a target to win the competition in the 6th year of its participation (i.e., by 2019). With each car that has been built, the team is producing results in the right direction towards achieving its target. Most of the car assemblies are now designed and fabricated by students themselves, exposing them to the practical side of mechanical engineering. Right from choosing the bolt and nut to the roll-cage design, everything is done hands-on. The team develops a CAD model, analyzes it using various CAE tools and the cycle continues, till it satisfies the targets for the competition. With unconditional support from the department in every form, the facilities in central workshop is utilized for fabrication. An added benefit is that the students learn management of resources, time, discipline, honesty, while excelling in academics and placements.


ELAN IITH


NSS IITH
ELAN






NSS IIT Hyderabad Activities – 2016-17

The year started with training the students on Medical and First Aid with the help of institute's hospital staff. In August, the student members of NSS welcomed the freshmen for orientation program and kick-started the fortnight celebrations of Independence Day with a Blood Donation and Cloth Donation Drives. More than 160 volunteers participated in various activities organized by NSS IITH. To support the mission of Clean India, NSS IITH organized Swacch Bharath Campaign every semester. NSS IITH also celebrated Gandhi Jayanti and Children's Day and shared the vision of those leaders lead India to independence. NSS IITH supported Open Day, Vidyadaan, organized for rural school children. It also supported the ITDA Start-30 visit to get first-hand experience of the state of the art research happening at IITH. Both the programs were aimed at inculcating scientific temper in school children.

On the festive day of Diwali, Cloth Collection Camps were organized in six locations in and around Hyderabad. Following the motto **Not Me But You** to the truest sense, in an orphanage visit, NSS IITH stood firmly in assuring the destitute children a hope of togetherness and happiness.





International Day of Yoga

IIT Hyderabad, sports department and NSS cell has organized second International Day of Yoga Fest 2016 from 16 to 21 June. On 16 June started with the lightning of lamp by Dr. Prem Pal, Dean Students at UDDH. It was followed by yoga practice with meditation and pranayama. From 17th to 20th June daily at D block terrace between 8:00 to 9:00 AM the yoga experts demonstrated deferent asanas to all the participants regularly. On 21st June, Second International Day of Yoga, started at UDDH by Prof. U B Desai, Director IITH with a speech about yoga and its uses in practicing on a daily basis. It followed by practicing of yoga asanas and meditation demonstrated by yoga experts. Later there was short speech followed by vote of thanks by Dr S G Singh, Chairman Sports.

Sports 2016-17

With strength of around 600 students, the National Sports Organization started its full-fledged program for the academic year 2016-17 in the month of August. The list of events goes as follows:

Friendship Race

It was conducted on 6 August 2016 as a part of freshmen interaction on the eve of International Friendship day. It had a huge participation of around 500 students, staff and faculty with their family members. Prizes for the event were distributed on the eve of Independence Day.

Inter-IIT Sports Meet 2016

Camp for Inter-IIT Sports Meet 2016 started on 30 November with a total participants of 113 in various events like Badminton (M&W), Basketball (M&W), Cricket, Football, Hockey, Lawn Tennis (M&W), Table Tennis (M&W), Volleyball (M&W) and athletic events. Inter-IIT Sports meet 2016 held at IIT Kanpur from 12 to 19 December.

Intramural Sports

Informal leagues for badminton, basketball, cricket, hockey, volleyball, table tennis and football were conducted. The 9th annual sports meet was Inter year. We organised Inter-Year Sports Meet in which UG, PG and staff participated better than ever and made students compete in the same level as in Inter-IIT Sports Meet. It covered all the team events along with athletic events as that of the Inter-IIT sports meet. Prizes were distributed on Gymkhana day.

Interaction Matches

As major part of freshmen interaction program, football, cricket, volleyball, basketball, badminton etc were conducted from the date of registration till 10 August 2016.

NSO

Our first NSO interaction with fresh men was conducted on 3 August. The main aim of NSO, IIT Hyderabad is to inculcate sportive spirit in the students. With six coaches in total for various events and sports equipment for about eight team events, aquatics and athletics, it has been and is functioning smooth. New registrations for NSO were invited from the freshmen. After enrolment, NSO hours have been conducted on every Wednesday and Friday for all the NSO registered B.Techs.

Run for Unity

It was organized on 31 October 2016 on the eve of Rashtriya Ekta Diwas. It had huge participation from students, faculty and staff.

Friendly tournaments

Students of IIT Hyderabad have played friendly practice matches with institutes like BITS Hyderabad, GITAMS Hyderabad, Medak District teams and ODF employees' team.

Students also participated in friendly tournaments with CBIT, IIT Hyderabad, BITS Hyderabad etc.

Gymkhana Day

On 11 April, prizes were distributed for winner teams of various events and rolling shield for General Champion Ship for the 4th year which bagged highest points in inter year sports meet- 2017. Mementos for Sports person of the year and for the best athlete were also given.

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